

**THE REGULATORY LANDSCAPE
OF PLASTIC GOVERNANCE:
A NORWEGIAN PERSPECTIVE**

**PLAST
ICENE**

The role of humans in the life of plastic

PROJECT REPORT

PLASTICENE – GOVERNANCE MATRIX

Results from mapping of governance arena
for plastics in Norway

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ABSTRACT

In this report we co-produced a matrix of governance
fragmentation in the Norwegian plastic value chain to
assess where there are overlaps, interplay and synergies
to be aligned. This also included an assessment of the
global level of plastic regulatory fragmentation as it relates
to the upcoming negotiations for a global treaty to end
plastic pollution.

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01 THE PLASTICENE PROJECT



PLASTICENE is a project funded by the Norwegian Research Council. It consists of four partners – SINTEF (represented by SINTEF Ocean, SINTEF Industry, SINTEF Community and SINTEF Helgeland), Deloitte, WWF Norway, and House of Knowledge – and is coordinated by SINTEF Ocean. The project takes a full life-cycle approach to building new knowledge and addressing important processes for increased plastic circularity and effective plastic waste management, with the aim of supporting improved plastic material utilization and protecting the environment from plastic pollution.

This is critical, as more than 460 million tons of plastic are produced globally every year as of 2019¹. Plastic waste and emissions of plastic to nature represent significant societal challenges, and increased knowledge of the plastic resource flow is essential. The regulatory landscape for plastics governance in Norway and abroad is fragmented though, and nested within multiple layers of overlapping global, regional, local and industry-focused initiatives aimed at curbing the flow of plastics to the environment and ensuring circularity.

To ensure best regulatory practices from a Norwegian perspective, within the context of developing a global treaty for plastic pollution, we need to disentangle the landscape of regulatory puzzle pieces and organize it to assess where the primary challenges lie ahead, from diverse regulatory perspectives.

There are numerous governance initiatives to curb the pollution problem. Some originate as industry-level regulatory frameworks, while others focus on national regulations such as producer responsibility or local municipalities and their regulations for wastewater treatment and recycling.

The aim of this report is to highlight what the current collection of regulations in fact is, while bridging the gaps within them.

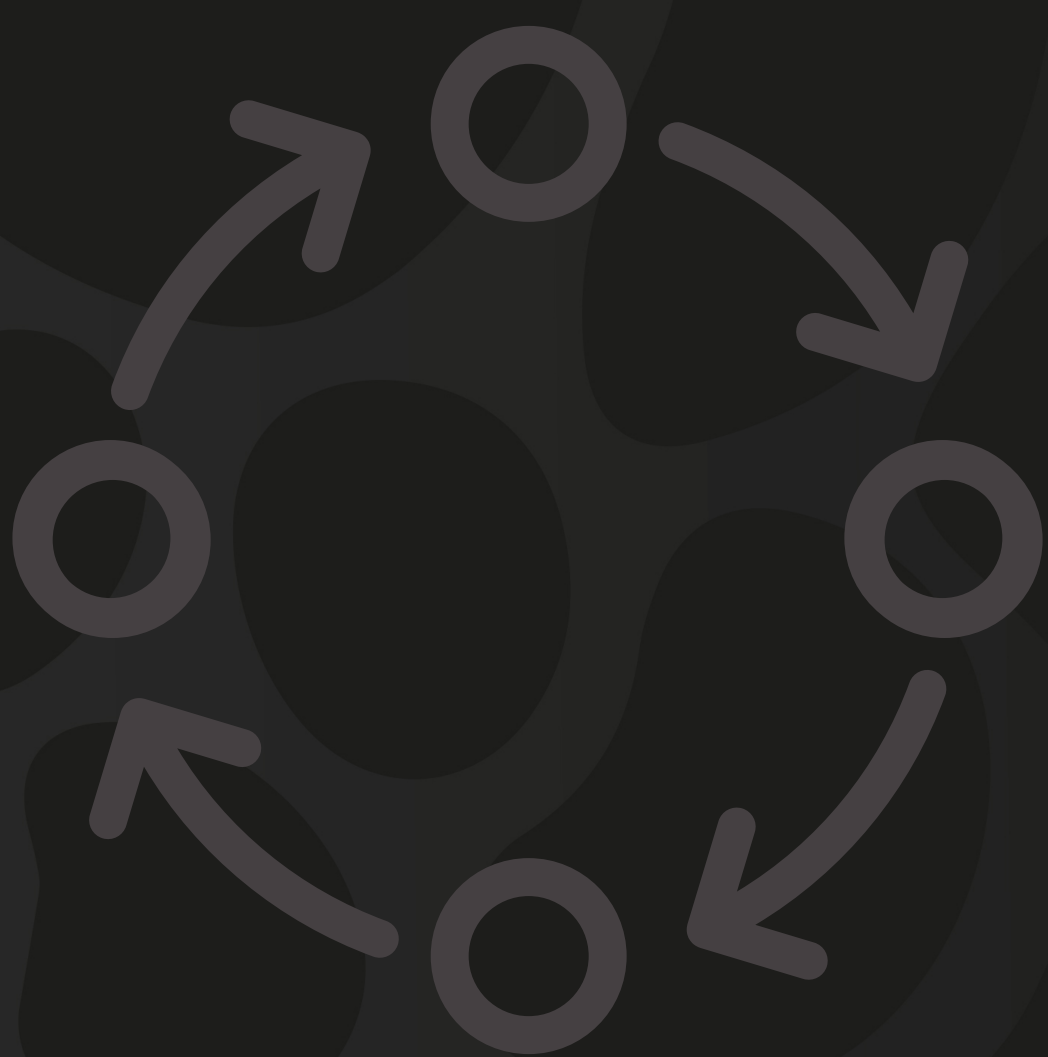
PLASTICENE

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¹ OECD, 2023 "Global plastic waste set to almost triple by 2060"
<https://www.oecd.org/environment/global-plastic-waste-set-to-almost-triple-by-2060.htm>

03 METHODOLOGY



For the purposes of this study, we apply a multi-level governance framework to assess the contextual settings of plastics governance throughout three simplified stages of its life cycle – production, use and end-of-life. We illustrate the diffusion of authorities around the issue area, by highlighting the interplay of traditional hierarchical state-centric governance frameworks through Norwegian lenses, with

public-private partnerships, orchestration, private labels, and transnational collaborations. Szulecka et al.,⁸ organizes this governance type into two different categories – where plastic governance finds its home in type II (see Table 1). Outside of this theoretical approach, the methods applied in this study include desktop analysis of the relevant peer-reviewed literature, current legislation, and relevant reports.

TABLE 1: MULTI-LEVEL GOVERNANCE ANALYSIS TYPES

Type I:	Type II:
General purpose	Task specific
Well ordered	Fluid, intersecting membership
Clear lines of accountability	Accountabilities less clear
'Russian doll set'	Puzzle of many units, providing services, solving problems

Scope of the report

The aim of this report is to provide a comprehensive overview of Norwegian plastic policy at multiple levels of governance. The report examines how the Norwegian national level of plastic regulation is inherently shaped by EU and global plastic policies. Due to plastic reaching all corners of industry and society, it has been necessary to limit the scope of plastic groups. The report will therefore not be able to cover every single actor, legislation and agreement that governs plastics, but we will cover what we believe to be the main elements able to provide a big picture overview. This report also does not cover all types of plastic groups, such as textiles, EE-products and microplastics. We will focus our attention on the current and upcoming regulations specifically targeted towards packaging and single-use plastics, and further describe how these have been incorporated at both the national and municipal levels. This is due to plastic packaging making up a large portion of plastic pollution.

The paper proceeds in the following order: Chapter 4 provides the reader with definitions of central terminology and a detailed matrix of the local to global governance schemes within the context of plastics, aiming to visualize the complexity of the main components and actors within plastics governance; Chapter 5 presents central management tools associated with plastic regulations from a global to a local level. This involves clarifying the relationship between different governance levels within the Norwegian hierarchy, while additionally considering the connection between national and regional legislation and regulations; Chapter 6 includes a discussion on the multiple levels of plastic governance in Norway, while chapter 7 concludes the report and looks forward to a future global agreement.

⁸ Szulecka, Julia, Nhat Strøm-Andersen, Lisa Scordato, and Eili Skrivervik. "Multi-Level Governance of Food Waste: Comparing Norway, Denmark and Sweden." In *From Waste to Value*: Routledge, 2019.

04 MULTI-LEVEL GOVERNANCE & MATRIX



One of the aims of the multi-level governance work in the PLASTICENE project is to co-create a matrix from the national (Norwegian Ministry of Climate and Environment) to the global level, covering governance schemes within the context of plastic products, and how this will work in interplay within the ongoing global plastic treaty negotiations currently under development. The levels ranging from national to municipal

relate to Norwegian regulation, the regional entity follows EU regulation, while the global level down to the consumer falls under miscellaneous schemes, see Table 2. This is a tool to help visualize the complex nature of the main components and actors at play in plastics governance and to subsequently uncover overlaps and pitfalls within the various levels of regulation.⁹

TABLE 2 : LEVEL OF GOVERNANCE SCHEMES (NORWAY, EU, GLOBAL)

Municipality	<p>Norway has 365 municipalities as of 2021. The municipalities have various roles as outlined below:</p> <ul style="list-style-type: none"> - Develop the community in cooperation with citizens and industry - Planning authority (municipal area- and transport plans) - Service provider (education, health and care) - Owner and operator (buildings, infrastructure, forest, municipal companies and fund placements) - Public procurement of products and services <p>The municipalities have littering authority. There are national requirements to sort out specific waste streams, but no national requirements on how to organize waste management.</p>
County Governor	<p>The county governor is the state's representative in the county, performing a variety of administrative tasks on behalf of the ministries. This level of responsibility includes environmental protection, pollution and nature management.</p>
County	<p>Norway has 11 counties as of 2021. The counties have various roles as outlined below:</p> <ul style="list-style-type: none"> - Regional planning authority (overrides the municipal plans and acts as supervisor for the municipalities in the planning processes) - Service provider (education (high school), public transport) - Public procurement of products and services - Owner and operator (buildings and offices) - Responsible for building, operating and maintaining County roads - Some counties are responsible for grant schemes to the municipalities (including measures to fight climate change) <p>The counties can be responsible for pollution (Chapter 11 of the Pollution Act) when special needs are justified.</p>
National	<p>At the national level, the Ministry of Climate and Environment is leading the way for handling plastics and waste, they are in charge of making requirements.</p>
Regional	<p>At the regional level, the EU provides directives that Norway is required to follow. Some of the directives related to the plastic lifecycle include:</p> <ul style="list-style-type: none"> - Directive on single-use plastics - Directive on plastic bags <p>The EU also provides guidance vis-à-vis strategies including the European Green Deal, the Circular Economy Action Plan, as well as the Plastics Strategy. Directives must achieve certain results, but it is up to the Member States to decide how to implement these into national law.</p>
Global	<p>There are numerous agreements at play at the global level when it comes to plastics, however, we have yet to reach one concrete, legally binding agreement which covers the entire lifecycle. Until one is agreed upon, we have agreements at the global level which typically cover the downstream aspects of the plastics lifecycle in the marine environment. Some of these include:</p> <ul style="list-style-type: none"> - MARPOL Convention Annex V (covering pollution at sea) - Basel Convention (Transboundary movement of chemicals in plastics)

⁹ Kral, Pavel, Stanislav Tripes, Petr Pirozek, and Pavel Pudil. Two-Dimensional Governance Matrix: A Framework to Evaluate Organizational Governance. Proceedings of 8th European Conference on Management Leadership and Governance, 2012.

The regulations at play for plastics depend on which part of their lifecycle they cover. We understand that the lifecycle of plastics can be defined in more detail than three steps (i.e., extraction of raw materials, refinement, processing,

distribution, etc.). However, for the purpose of this report, we define the different levels of the plastics lifecycle as described in Table 3.

TABLE 3 : LIFECYCLE DEFINITIONS OF PLASTICS AS IT RELATES TO THIS REPORT

Extraction/ Production	The initial process where raw material is extracted, new or recycled plastic resins are produced, and the products they are formed into
Use	The retail and utilization of a plastic product in the hands of an entity or consumer.
End-of-life	When a plastic product is no longer in use and is disposed of or down-cycled into a new product

In Figure 1 we provide a simplified visual of the life cycle of a plastic product (European Union, 2020).

This visual is to aid in understanding the complex interconnectedness of the matrix (see Figure 2).

FIGURE 1 : IMAGE OF THE LIFECYCLE OF A PLASTIC PRODUCT, BY THE EUROPEAN COURT OF AUDITORS (2020)



The matrix in Figure 2 can be viewed as an example which demonstrates the levels of governance a single PET bottle passes through in Norway, from the national to local level, as well as the regional and international level. The matrix then is divided between the three life cycles of a plastic product.

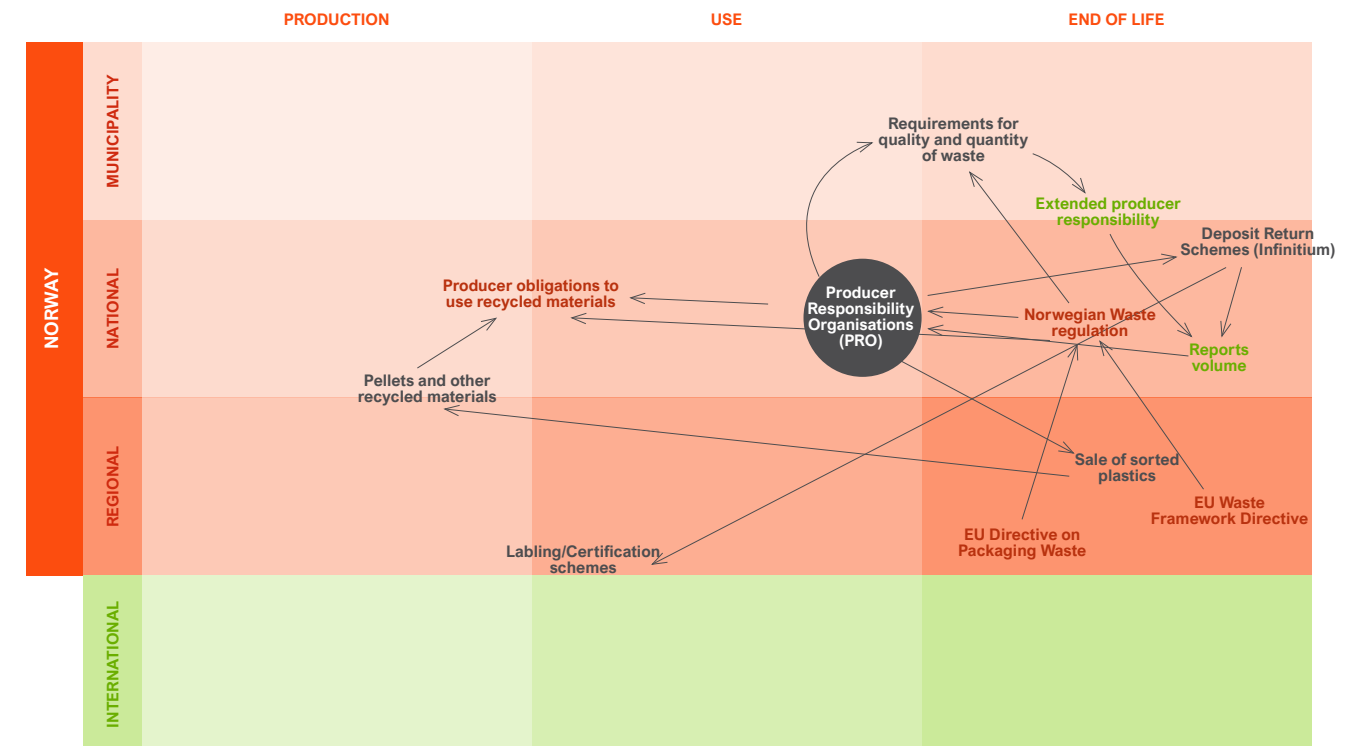
This demonstrates that, to date, most regulations deals with the end-of-life and downstream effects of plastic after use. Regulations can be seen in red text. The following Table 4 lays out in more detail what each level of the matrix entails.



TABLE 4 : DETAILED MATRIX DESCRIPTIONS OF MULTI-LEVEL GOVERNANCE SCHEMES TO REGULATE PLASTICS IN NORWAY AND ABROAD^{10/11}

GOVERNANCE ENTITY	OVERALL	PRODUCTION	USE	END-OF-LIFE
Municipality	Municipal action plans for plastic management Public procurement system	----	Reduction of plastic packaging at events, restaurants, and schools. Example of Bergen Municipality ¹²	Litter authority in Norway - Municipalities have a duty to collect and ensure proper treatment of municipal waste - 50 per cent from 2028 onwards, 60 per cent from 2030 onwards and 70 per cent from and including 2035. Facilitate recycling (not a demand) Delegate responsibility to private actors (Grønt punkt) Pollution Act § 30
County	Facilitates collaboration with private industry. Regional planning and development authority. Must consider and prioritize sustainable solutions in their planning work. Establishes aid schemes that municipalities may apply for.	----	May reduce plastic consumption through sustainable public procurement. Promotes reduced plastic use.	Promotes better regional cooperation in clean-up efforts.
County Governor	Appellate body for individual decisions made at municipal level under the Pollution Control Act. Notification body for the national Ministry of Local Government and Regional Development (KDD) ¹³	Quality control for the Municipalities. New producers must be approved by the County Governor in terms of risk assessment.		Grants permits for the operation of waste facilities pursuant to the Waste Control Act § 29. May set requirements on, e.g., how the waste management shall be organized to ensure the highest possible degree of sorting and recycling. Supervises the handling of industrial waste pursuant to the Waste Control Act § 32. Has authority to instruct producers to deliver industrial waste to municipal waste facilities. Grants permits for incineration facilities and subsequent emissions. May set requirements on, e.g., energy efficiency.
National	The Pollution Control Act (regulates the responsibilities of the waste producers) Ministry of Climate and Environment (KLD) is the Appellate body for the County decisions	Extended Producer Responsibility (EPR) Product Control Act – Gives eco-design provisions and regulates products from causing 'environmental disturbances'	Environmental tax on bottles and drinking cans.	The Norwegian Environment Agency – achieves national objectives for waste and recycling to prevent pollution Extended Producer Responsibility (EPR) Marine resources Act no.37 – forbids dumping of fishing gear. The Pollution Control Act forbids littering
Regional	EU, OSPAR, Nordic Cooperation, Arctic Council, REACH	EU directives on waste and plastic packaging, the Circular Economy and EcoDesign	EU SUP Directive entered into force July 3rd, 2021, and retailers had one year to get SUPs off store shelves	EU plastics strategy EUs Waste Framework Directive and European Action plan on Circular Economy 2.0
Global	SDG12 Global Plastic Treaty (ongoing)			G7 Plastics Charter G20 Action Plan IMO Basel Convention
Private and Orchestration	Working through an intermediary to reach the goal of curbing plastic pollution. Indirect governance.	Purchasing power Labels and certification EPR	Norwegian Retailers' Environment Fund (HMF) – fee on all plastic bags sold.	Local beach clean-ups Delegated responsibility from municipality. EPR

FIGURE 2 : MATRIX OF THE MULTIPLE LEVELS OF GOVERNANCE A PET BOTTLE IN NORWAY COVERS.



¹⁰ Ingeborg Mork-Knutsen. (2021, February 1). *Norway: Actions and Progress on Marine Plastic Litter—Policy framework*. Towards Osaka Blue Ocean Vision: G20 Implementation Framework For Actions on Marine Plastic Litter. <https://g20mpl.org/partners/norway>

¹¹ Ministry of the Environment. (2006, November 13). *The Norwegian Environment Agency*. Government.No; regjeringen.no. <https://www.regjeringen.no/en/dep/kld/organisation/Subordinate-agencies/the-norwegian-environment-agency/id85642/>

¹² Bergen Kommune (N.a.) *Norway: Smartere plastbruk i Bergen kommune* <https://www.bergen.kommune.no/politikere-utvalg/api/fil/2088931/Smartere-plastbruk-i-Bergen-kommune>

¹³ Ministry of Local Government and Regional Development. (2014, January 1). *Ministry of Local Government and Regional Development*. Government.No; regjeringen.no. <https://www.regjeringen.no/en/dep/kdd/id504/>

05 PLASTICS GOVERNANCE

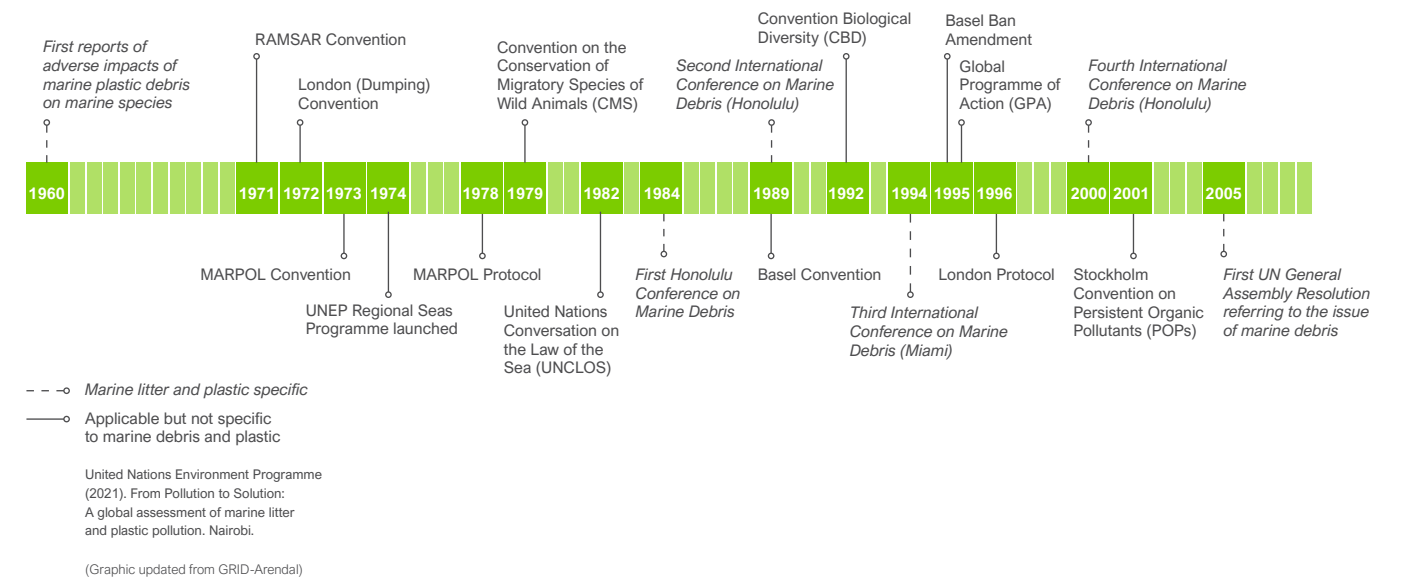


In this chapter, we provide an overview of the role each regulatory body plays in governing plastics from the global scale to the local level in Norway. This will provide clarity to the hierarchical structure of Norwegian plastics governance, specifically where regulation comes from the top down (EU, Regional, and Global levels). It will also cross various levels of the life-cycle by including where plastics can be regulated, from production, to use, to end-of-life. By highlighting the extensive autonomy that the regional and local authorities have within a multi-level framework, we additionally address how they are important implementers of nationally defined policies around plastics, which again is developed, financed and coordinated by the national government.¹⁴ This report will not consider the reasons behind why Norway is engaged in these activities, how government actors engage, or the effectiveness of different actions and agreements on tackling the problem of plastic pollution.

5.1 _ GLOBAL GOVERNANCE

The field of global governance of plastics is a growing domain, with scientific evidence being widely presented about the harmful effects of plastics in the marine environment. This evidence dates back to 1984, when the first international conference on the impact of marine debris was held. This eventually evolved into plastics being officially recognized as a threat to the marine environment at a global scale in June of 1992, at the Rio Earth Summit Conference. The global governance arena of plastics includes both top-down and bottom-up integration of policies. Although the political ambition started in the marine environment, it has moved to cover the terrestrial as well, making the coordination and implementation of policies from the global level important to tackling the problem. This section highlights the most important institutions and agreements involved in global environmental governance, starting with the UN (see Figure 3).

FIGURE 3 : GRAPHIC ON THE TIMELINE FOR GLOBAL PLASTIC POLLUTION INITIATIVES, LAWS AND POLICIES
TIMELINE FOR SELECTED INTERNATIONAL MARINE LITTER AND PLASTIC POLLUTION INITIATIVES, LAWS AND POLICIES
Between 1960 and 2009



¹⁴ Hanssen, G. S., Nergaard, E., Pierre, J., & Skaalholt, A. (2011). Multi-level governance of regional economic development in Norway and Sweden: too much or too little top-down control?. *Urban Research & Practice*, 4(1), 38-57. <https://doi.org/10.1080/17535069.2011.550539>

“The plastic crisis extends beyond all borders, impacting the health of our oceans and wildlife, and the livelihoods of people from major cities to small coastal communities. The scope and scale of this global issue must be met with equally ambitious solutions”

Erin Simon, Vice President and Head of Plastic Waste and Business, WWF

5.1.1 The United Nations Environment Programme and the United Nations Environment Assembly

Over the last decades, numerous resolutions and efforts have led to the historic resolution 5/14, entitled “End plastic pollution: Towards an international legally binding instrument” (RES 5/14), adopted by the United Nations Environment Assembly on 2 March 2022 at its resumed fifth session (UNEA 2022)¹⁵. With this, UN Member states have started negotiations on an international legally binding instrument on plastic pollution, including in the marine environment, with the Intergovernmental Negotiating Committee (INC) as developers of the instrument. Between 2022 and 2024, negotiations will take place between UN member states as part of the INC to determine what the international legally binding instrument on plastic pollution must include. A prominent feature of this potential global plastics treaty like any, is that it must be implemented and taken up at the national level. The resolution calls for Member States to continue to adopt measures to combat plastic pollution, considering all aspects of the life cycle as seen fit under national circumstances. This may also include simultaneously implementing national action plans to eliminate plastic litter, and to manage the environmental problems caused by it, at the source (UNEA, 2022 #410).

The United Nations Environment Programme (UNEP)

UNEP was founded in 1972 as part of the United Nations conference on the Human Environment. It was created to monitor the state of the environment, inform policy making with science and coordinate responses to the world’s environmental challenges. Over the years, UNEP has supported and initiated several of the multilateral agreements, programmes, action plans and partnerships between UN Member states (e.g., the Basel Convention, the Montreal Protocol and the Regional Seas Programme).

The United Nations Environment Assembly (UNEA)

The United Nations Environment Assembly (UNEA) sets the agenda for dialogue on environmental issues and is the world’s highest level decision-making body on the environment with its 193 Member states. The assembly meets biennially in Nairobi, Kenya, and is convened by UNEP. The first assembly was held in 2014.

5.1.2 Norway within global plastics governance

Norway has been an outspoken leader since the first UNEA session in 2014, which promoted the early idea for the need of a global agreement to combat marine plastic litter. The first resolution on plastic pollution was adopted at the UNEA session in 2014 (UNEP/EA.1/Res.6). To follow the adoption of RES 5/14, Norway, Rwanda and a group of like-minded countries have taken the initiative to form a coalition to end plastic pollution, called “the high ambition coalition to end plastic pollution” (HAC to end plastic pollution). The HAC is co-chaired by Norway and Rwanda and is committed to developing an ambitious, international, legally-binding instrument. Their common ambition is to end plastic pollution by 2040.¹⁶

As a follow-up to the vision to eliminate the discharge of litter and microplastics into the oceans over time, agreed upon at the third UNEA session in 2017, the Norwegian government launched a new development programme to combat marine litter and microplastics. The Government of Norway will spend 1,6 billion NOK on the development programme in the period 2019 to 2024. Among recipients are multilateral organizations such as the UN and the World Bank, non-governmental organizations (NGOs) and research institutes. The focus is on populous and economically fast-growing countries in Asia with long coastlines.¹⁷

Norway has also been a part of, and a contributor to, the UNEP Clean Seas Campaign since its beginning in 2017.¹⁸ The Clean Seas Campaign’s priority is to highlight the scale of marine plastic pollution by calling on citizens across the world to reduce their plastic footprint and speak up for their right to a healthy environment, including pollution-free oceans using the hashtags #BeatPlasticPollution and #CleanSeas.¹⁹

¹⁵ UNEP/EA.5/Res.14. Information on reports and updates by the Technology and Economic Assessment Panel (unep.org). 23.11.2022.

¹⁶ *End Plastic Pollution by 2040*. (n.d.). High Ambition Coalition to End Plastic Pollution. Retrieved 8 Feb. 2023, from <https://hactoendplasticpollution.org/>

¹⁷ Ministry of Foreign Affairs. (2020, May 15). *The Norwegian Development Program to Combat Marine Litter and Microplastics*. Government.No; regjeringen.no. https://www.regjeringen.no/en/dokumenter/marine_litter/id2642037/

¹⁸ Ministry of the Environment, Japan. (2022). *G20 Report on Actions against Marine Plastic Litter: Fourth Information Sharing on the G20 Implementation Framework 2022* (No. 2nd; p. 202). https://g20mpl.org/wp-content/uploads/2022/08/G20MPL-report-2022_2nd-edition_1108.pdf

¹⁹ Kariuki, A., & Savelli-Soderberg, H. (2021, June 9). *Clean Seas Campaign promotes the right to a healthy environment, including plastic-free oceans*. UNEP. <http://www.unep.org/news-and-stories/story/clean-seas-campaign-promotes-right-healthy-environment-including-plastic>

5.1.3 Ocean plastic charter (G7) and Osaka Blue Ocean Vision (G20)

Norway also participates in initiatives on plastics under the G7 and G20. Under the G7 Summit in 2018, Canada initiated the Ocean Plastics Charter which takes a comprehensive lifecycle approach to addressing plastic pollution and waste. Some of the objectives of the charter are to commit to a resource-efficient lifecycle management approach to plastics in the economy through, amongst others, sustainable design, sustainable production and sustainable after-use markets.²⁰ Partners of the charter, including Norway, are invited to implement the objectives and commitments of the charter and to report on their progress through their reporting processes.²¹

At the G20 Summit in 2017, the G20 Action Plan on Marine Litter was launched. Then, at the G20 Ministerial Meeting on Energy Transitions and Global Environment for Sustainable Growth, the G20 Implementation Framework for Actions on Marine Plastic Litter was established. This was later endorsed by the G20 Leaders at the G20 Osaka Summit as a common global vision, known as the Osaka Blue Ocean Vision. This vision aims to “reduce additional pollution by marine plastic litter to zero by 2050 through a comprehensive life-cycle approach that includes reducing the discharge of mismanaged plastic litter by improved waste management and innovative solutions while recognizing the important role of plastics for society”.²² The partners of the G20 Osaka Blue Ocean Vision, including Norway, are encouraged to take part in different actions under the framework, e.g., information-sharing and continuous updating, promotion of international cooperation and innovative solutions, and multi-stakeholder involvement and awareness-raising.^{23, 24}

The G7 and the G20

The G7 summit is a forum bringing together leaders from the EU, Canada, France, Germany, Italy, Japan, the United Kingdom and the United States. The forum plays an important role in shaping global challenges, complementing the global economic coordination carried out by the G20.

The G20 is an intergovernmental forum connecting the world's major economies. G20 members include Argentina, Australia, Brazil, Canada, China, France, Germany, India, Indonesia, Italy, Japan, Mexico, the Republic of Korea, Russia, Saudi Arabia, South Africa, Turkey, the United Kingdom, the United States and the European Union.

The government responsible for the presidency for each G7 and G20 summit, varies every year. In addition to hosting the meeting, the presidency is also responsible for setting the agenda and the overarching theme for the meeting.

5.1.4 The Assembly of the International Maritime Organization

Finally, Norway is a part of the Assembly of the International Maritime Organization (IMO),²⁵ which is a specialized agency under the United Nations, responsible for implementing measures to improve the safety and security of international shipping and prevent pollution from ships. IMO was first established in 1948 and has introduced a series of measures designed to prevent tanker accidents and tackle environmental threats caused by routine operations. One of the most important measures IMO introduced in relation to this report is the Convention for the Prevention of Pollution from Ships, also called the MARPOL protocol 73/78, which in addition to the threats mentioned earlier, also covers chemical pollution, goods in packed form, sewage, garbage and air pollution.²⁶

As a member of the Assembly of IMO, Norway is involved in several projects. One of them is GloLitter Partnerships Project, where the Norwegian Agency for Development Cooperation (Norad) is a donor.²⁷ The GloLitter Partnerships support developing countries in identifying opportunities for the prevention and reduction of marine litter, especially plastic marine litter, and identify opportunities for the reduction of plastic uses within the maritime transport and fisheries sector.²⁸



²⁰ PACE. (n.d.). *Oceans Plastic Charter*. Platform for Accelerating the Circular Economy. Retrieved 8 February 2023, from <https://pacecircular.org/oceans-plastic-charter>

²¹ Government of Canada. (2021, December 9). *Ocean Plastics Charter* [Statements]. Canada. <https://www.canada.ca/en/environment-climate-change/services/managing-reducing-waste/international-commitments/ocean-plastics-charter.html>

²² Institute for Global Environmental Strategies (IGES). (n.d.). About Us. Towards Osaka Blue Ocean Vision: G20 Implementation Framework for Actions on Marine Plastic Litter. Retrieved 8 February 2023, from <https://g20mpl.org/about>

²³ Institute for Global Environmental Strategies (IGES). (n.d.). About Us. Towards Osaka Blue Ocean Vision: G20 Implementation Framework for Actions on Marine Plastic Litter. Retrieved 8 February 2023, from <https://g20mpl.org/about>

²⁴ Consilium Europa. (2022a, June 26). *G7 summit, Schloss Elmau, 26-28 June 2022*. <https://www.consilium.europa.eu/en/meetings/international-summit/2022/06/26-28/> Consilium Europa. (2022b, November 16). *G20 summit, 15-16 November 2022*. <https://www.consilium.europa.eu/en/meetings/international-summit/2022/11/15-16/>

²⁵ International Maritime Organization. (2021, December 10). *IMO Assembly elects new 40-Member Council*. Imo.Org. <https://imopublicsite.azurewebsites.net/en/MediaCentre/PressBriefings/pages/ElectionResults2021.aspx>

²⁶ International Maritime Organization. (n.d.). *Brief History of IMO*. Imo.Org. Retrieved 17 February 2023, from <https://www.imo.org/en/About/HistoryOfIMO/Pages/Default.aspx>

²⁷ IMO & FAO. (n.d.). *Reducing sea-based marine plastic litter*. GloLitter Partnerships. [https://www.wcdn.imo.org/localresources/en/OurWork/PartnershipsProjects/Documents/DPP-Factsheets/DPP%20one-page%20fact%20sheets_\(25-10-21\)_FINAL_ONLINE_GLOLITTER.pdf](https://www.wcdn.imo.org/localresources/en/OurWork/PartnershipsProjects/Documents/DPP-Factsheets/DPP%20one-page%20fact%20sheets_(25-10-21)_FINAL_ONLINE_GLOLITTER.pdf)

²⁸ IMO. (n.d.). *GloLitter Partnerships Project*. Imo.Org. Retrieved 17 February 2023, from <https://www.imo.org/en/OurWork/PartnershipsProjects/Pages/GloLitter-Partnerships-Project-.aspx>

'There are many goals which we cannot achieve on our own, but only in concert. Tasks are shared between the European Union, the Member States and their regions and local authorities.'

*(European Council et al. 2007)
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5.2 REGIONAL GOVERNANCE

When it comes to the regional level, Norway works to support efforts established by the EU as well as regional areas of importance such as the Arctic, Atlantic and North Sea basins. Being one-foot-in and one-foot-out of the EU, Norway collaborates with the EU through the European Economic Area (EEA) agreement. Formally, not all EU regulation automatically gets included in the EEA agreement, as it must first be considered relevant for the agreement. Norway can therefore benefit from the common European Directives and Regulations, and actively participate in the EU's Single Market. Through the EEA agreement, Norway is expected to implement the amendments to the EU Waste Framework Directive, the Packaging Waste Directive, and the Directive on the reduction of the impact of certain plastic products on the environment (Directive on Single-Use plastics).²⁹ Directives have certain end results that must be achieved, but the path towards implementation is open for Member States to decide. Regulations on the other hand, are strict and legally binding from the implementation phase. The mentioned directives and other regulations are outlined in the following paragraphs.

5.2.1 The European Green Deal

By laying the foundations for circularity, the 2015 Action Plan enabled the adoption of additional policies, including the European Green Deal (EGD) and the new Circular Economy Action Plan (CEAP). The European Green Deal was presented by the European Commission in 2019, resulting from a series of policy developments made by the Commission since 2011. It is a comprehensive growth strategy, aiming to ensure a green transition and a competitive Europe.³⁰ Furthermore, the announcement of the EGD led to the development of the new CEAP, adopted in March 2020. The Action Plan is amongst the main building blocks of the EGD, containing 35 measures that together form a new framework for sustainable products. Within the Green Deal is the Circular Economy Package from

March 2022, which aims at initiatives needed in the upstream part of the life cycle, i.e., design and particular characteristics for products being placed on the market. In January 2021, the EU additionally introduced a tax on plastic packaging waste. The tax is set at €0.80 per kilogram of plastic packaging that cannot be recycled or used in recycling, thus aiming at accelerating Europe's transition to a circular economy.³¹

Improving the circularity of the European economy has been amongst the core strategies of the European Commission since their adaption of the first Circular Economy Package in 2015. This package, known as the European CEAP, provides both legislative and non-legislative initiatives to implement circular economy policies across Europe and abroad. Through applying measures targeting the maintenance of values within products, materials and recourses, the Action Plan aimed at developing a resource-efficient and competitive economy. Moreover, the plan mapped out 54 actions and four legislative proposals on waste, including a revision of the EU Waste Framework Directive (2008/98/EC) and the Packaging Waste Directive (94/62/EC). By March 2019, all 54 actions were delivered or implemented. Additionally, an update on the mentioned directives was made in 2018, while a revised directive on Single-Use Plastics was included and further developed as a corollary of the Plastic Strategy. The Circular Economy Package also stresses the importance of product design. Moreover, the strategy has introduced Extended Producer Responsibility (EPR)³² schemes on several plastic products, as well as bans on certain single-use plastic products.³³ Additionally, a part of the EU is the REACH regulation which aims to protect human health and the environment from harmful chemicals such as plastic additives.

²⁹ Deloitte. (2020). *Reducing Plastic Pollution and Creating a True Circular Economy for Plastics through Extended Producer Responsibility* (pp. 1–56). https://media.wvf.no/assets/attachments/Report_Deloitte_AS_WWF.pdf

³⁰ European Commission. (n.d.-a). *Circular economy action plan*. Environment.Ec.Europa.Eu. Retrieved 17 February 2023, from https://environment.ec.europa.eu/strategy/circular-economy-action-plan_en

³¹ European Commission. (2021, January 1). *Plastics own resource*. Commission.Europa.Eu. https://commission.europa.eu/strategy-and-policy/eu-budget/long-term-eu-budget/2021-2027/revenue/own-resources/plastics-own-resource_en

³² Extended producer responsibility schemes are presented in detail in sub-chapter 5.8.1.

³³ EU-Case-Study-june2020-EN.pdf

5.2.2 EU Directives

Directives are amongst the main types of legislation passed by the EU. According to the European Union, directives are “legislative acts which set out goals that all EU countries must achieve”.³⁴ In contrast to a regulation, i.e., a binding legislative act, the directives give each individual country the responsibility to devise its own laws on how to achieve its goals. In the following sections, we thus elaborate on directives that will be of relevance to the handling of plastics in Norway.

The Waste Framework Directive

The European Waste Framework Directive (WFD) establishes a legislative framework for the handling of waste in the European Union. Moreover, the determination of basic concepts and definitions related to waste management, including that of waste, recycling and recovery,³⁵ causes the WFD to re-define waste as a resource. The role of sustainable resource management is reflected in the WFD targets which are set for preparing for reuse and recycling of municipal waste. The EU WFD is currently under revision, aiming to improve the overall environmental outcome of waste management in accordance with the waste hierarchy, as well as the implementation of the polluter-pays principle.^{36, 37}

Furthermore, the WFD sets binding targets for the Member States which are necessary for the achievement of a circular economy and the associated high levels of resource efficiency. In Article 11 of the EU WFD (Directive 2008/98/EC) it is stated that Member States shall take necessary measures designed to achieve the following targets:

- by 2025, the preparing for re-use and the recycling of municipal waste shall be increased to a minimum of 55 % by weight
- by 2030, the preparing for re-use and the recycling of municipal waste shall be increased to a minimum of 60 % by weight
- by 2035, the preparing for re-use and the recycling of municipal waste shall be increased to a minimum of 65 % by weight

The EU’s WFD is, through its inclusion in the EEA agreement, considered the overall EU/EEA regulation in the area of waste. The Directive has also been implemented in Norwegian law, which makes the EU waste policy the primary part of the handling of packaging waste in Norway. Accordingly, strict targets in the EU waste regulations also apply to Norway, such as the requirement of 50% of household waste to be recycled, which is further expected to increase. The WFD is viewed in relation to the Norwegian law requirements in chapter 5.3.1.

The Directive on Packaging and Packaging Waste

The Directive on Packaging and Packaging Waste (94/62/EC) establishes a concrete binding standard for manufacturers and retailers placing all types of packaging onto the market. The scope of the directive covers both the design and waste management of packaging, thus providing regulations for what type of packaging can be placed on the EU market, for packaging waste management, and measures for the prevention of packaging waste.³⁸ In terms of rules and requirements concerning the management of packaging and packaging waste, every packaging actor is obligated to ensure a uniform environmentally friendly and health-friendly nature of their products, thus aiming to reduce waste generation. Additionally, the latest amendments to the Directive also include objectives and achievements of reuse, recovery, and recycling. In Article 5 of the EU Directive on Packaging and Packaging Waste (94/62/EC),³⁹ it is stated that the Member States shall achieve the following recycling targets for plastics within the 31st of December for each of the respective years:

- 50% recycling of plastic packaging waste by 2025
- 55% recycling of plastic packaging waste by 2030

In November 2022, the Commission published a proposal for a revision of the EU legislation on packaging and packaging waste. One of the proposed changes was making the directive a regulation instead, meaning that there are rules developed which must be included equally in all member states, leaving less room to adapt.⁴⁰ The proposed regulation includes several measures to intentionally give packaging a longer life, while additionally ensuring equal application in all EU Member States. Among the requirements is less use of packaging on products, increased use of recycled material in plastic packaging, better sorting and less packaging waste, less content of health and environmentally harmful substances and stricter requirements for manufacturers. The requirements from the commission will provide substantial benefits for the climate and the environment.

The Directive on Plastic Bags

The Directive on Plastic Bags (Directive (EU) 2015/20) is an amendment to the Packaging and Packaging Waste Directive (94/62/EC), adopted to handle the unsustainable consumption and use of lightweight plastic carrier bags - that is plastic carrier bags with a wall thickness below 50 microns.⁴¹ The directive requires Member States to implement measures such as national reduction targets, economic instruments (e.g., fees, taxes) and marketing restrictions (bans), specifically targeted towards reducing the high level of littering and inefficient use of resources caused by this plastic product.

The Directive on Single-Use Plastics

The Single-Use Plastics Directive (Directive (EU) 2019/904 on the reduction of the impact of certain plastic products)⁴² is among the main elements in the EU’s Plastic Strategy. By harmonizing a legislative framework across the EU and its Member States, the Directive aims to prevent and reduce

the environmental impact of certain plastic products, mainly those designed for single-use (SUP products).

In particular, this includes tackling marine littering and plastic waste through the introduction of measures such as market restrictions, consumption reduction and mandatory recycling and collection plans on single-use plastic items. Further, promoting the transition to a circular economy is amongst the directives’ objectives, which involves initiating innovative and sustainable business models, products and materials, thus contributing to the efficiency of internal markets.

³⁴ European Union. (n.d.). *Types of legislation*. European-Union.Europa.Eu. Retrieved 17 February 2023, from https://european-union.europa.eu/institutions-law-budget/law/types-legislation_en

³⁵ European Commission. (n.d.-b). *Waste Framework Directive*. Environment.Ec.Europa.Eu. Retrieved 17 February 2023, from https://environment.ec.europa.eu/topics/waste-and-recycling/waste-framework-directive_en

³⁶ See sub-chapter 5.8.1 for a more detailed definition of the polluter pays principle.

³⁷ Directorate-General for Environment. (2022, February 14). *Call for Evidence: Revision of the Waste Framework Directive revision*. https://environment.ec.europa.eu/news/waste-framework-directive-revision-2022-02-14_en

³⁸ Such measures include, amongst others, national programs, and incentives through extended producer responsibility schemes aiming to prevent generation of packaging waste, thus minimizing its environmental impact.

³⁹ European Parliament and Council Directive 94/62/EC of 20 December 1994 on packaging and packaging waste, (2018). <http://data.europa.eu/eli/dir/1994/62/2018-07-04/eng>

⁴⁰ European Commission. (2022). *Proposal for a Regulation of The European Parliament and of The Council on packaging and packaging waste*. <https://environment.ec.europa.eu/system/files/2022-11/Proposal%20for%20a%20Regulation%20on%20packaging%20and%20packaging%20waste.pdf>

⁴¹ Directive (EU) 2015/7 20 of the European Parliament and of the Council, no. 115/11, 1 (2015). <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32015L0720&from=EN>

⁴² The European Parliament and The Council of the European Union. (2019). *Directive (EU) 2019/904 of the European Parliament and of the Council*. Official Journal of the European Union. <https://eur-lex.europa.eu/eli/dir/2019/904/oj>

Moreover, products that can easily be substituted by more sustainable items of both suitable and affordable character, should be required to be prohibited in markets of EU Member States. This includes, amongst others, plastic cutlery and beverage containers made of certain plastic polymers. To additionally reduce the amount of littering caused by existing SUP bottles, the directive provides the following specific targets for collection and recycled plastics, respectively:

A collection target of 90% recycling for SUP plastic bottles by 2029, including an interim target of 77% by 2025, in which these bottles should contain at least:

- 25% recycled plastic, calculated as an average for all PET bottles placed on a Member State's market from 2025;
- 30% recycled plastic, calculated as an average for all such beverage bottles placed on a Member State's market from 2030

The EU's Single-Use Plastic Directive also affects Norway. It has been estimated that a ban on the 10 most commonly used single-use plastic (SUP) products could lead to the halting of 1.9 billion plastic products sold each year in Norway alone.⁴³ Chapter 5.3 explains how the presented directives are implemented in Norwegian law.

Regulation (EU) 2020/2151

In December 2020, the European Commission adopted a regulation (EU) 2020/2151 on harmonized marking specifications for certain single-use plastic products.⁴⁴ The implementation act complements the requirements for labelling certain products which are already specified in Article 7 of the directive on Single-Use Plastics (Directive (EU) 2019/904). By informing and making consumers aware of products containing plastics, the additional labelling is intended to help reduce littering and ensure better waste management. The requirement applies to products that are put on the market from July 2021, and applies to the first part of the supply chain, i.e., producers and importers.

FIGURE 4 : ITEMS COVERING THE EU'S SUP BAN AND PHASE OF THE LIFE CYCLE (ADAPTED FROM EU COMMISSION)

	Consumption reduction	Market restriction	Product design requirement	Marking requirement	Extended producer responsibility	Separate collection objective	Awareness raising measures
Food containers	X				X		X
Cups for beverages	X				X		X
Cotton bud sticks		X					
Cutlery, plates, stirrers, straws		X					
Sticks for balloons		X					
Balloons				X	X		X
Packets & wrappers					X		X
Beverage containers, their caps & lids			X		X		
• Beverage bottles			X		X	X	X
Tobacco product filters					X		X
Sanitary items:							
• Wet wipes				X	X		X
• Sanitary towels				X			X
Lightweight plastic carrier bags					X		X
Fishing gear					X		X

5.2.3 OSPAR Convention

Also included in the European regional context is the North-East Atlantic OSPAR Convention. Norway has played a leading role in forming the convention for the Protection of the Marine Environment of the convention.⁴⁵ OSPAR manages human activities impacting the marine environment and provides regular assessments of the state of the North-Atlantic Sea basins. Their view is to secure the marine environment's vision of a clean, healthy and biologically diverse North-East Atlantic which is productive, resilient to climate change and ocean acidification, and used sustainably.⁴⁶

In 2021, OSPAR ministers adopted the North-East Atlantic Environment Strategy 2030 (NEAES 2030), which commits to taking action to halt and reverse biodiversity loss, prevent and eliminate pollution including marine litter and underwater noise, and mitigate and adapt to the effects of climate change and ocean acidification in the marine environment.⁴⁷ The strategy is supported by an Implementation Plan with actions that will contribute to reaching the objectives of the strategy. In addition to this, OSPAR has adopted a new Regional Action Plan for Marine Litter in 2022 (RAP ML 2), following up the previous RAP 2014-2021. RAP ML 2 will be fully integrated with and reported on under the NEAES Implementation Plan.⁴⁸ Norway is legally bound by the OSPAR Convention to protect the North-East Atlantic marine environment, and will cooperate with member nations to prepare the RAP ML 2 by 2023. Also, as part of OSPAR, Norway currently assesses beach litter, seabed litter and plastic particles in the stomachs of seabirds such as the fulmar.

5.2.4 Nordic cooperation

Nordic countries have long traditions for political cooperation and are in fact considered one of the world's most extensive forms of regional collaboration. The official level of cooperation between the Nordic governments is led by the Nordic Council of Ministers, which in turn consists of several ministerial councils, including that on the Environment and Climate. The Nordic council of Ministers for the Environment and Climate⁴⁹ is moreover considered a role model with regards to initiating work that promotes healthy marine ecosystems in the Nordic oceans and facilitates the green transition. With the aim of preserving and improving the environment, the exertion should influence climate actions at both regional and international levels. In August 2022, it was additionally decided to strengthen the cooperation on oceans and climate actions.⁵⁰

5.2.5 Arctic council

As an Arctic nation, Norway is part of the Arctic council. The Arctic Council is a leading intergovernmental forum amongst the Arctic states, which promotes cooperation, coordination, and interaction to address sustainable development and environmental protection in the Arctic. As ocean currents are a vector for transporting plastic pollution, a relatively new goal of the Arctic Council is to improve understanding of how plastics travel to Arctic waters, and the risk they pose to them. Plastic pollution and marine litter are now a priority area of the Council's six working groups. Although plastic is a priority area within the Arctic Council, the body does not have regulatory authority⁵¹ but works to understand the impacts plastic pollution has on the Arctic environment, and if pollution comes from local or distant sources.

⁴³ Norwegian Product Regulation § 2b-3 state that the following single-use products are prohibited: cutlery, plates, straws, balloon sticks, mixing sticks and cotton swabs in plastic, food containers, drinking cups and beverage packaging made of Styrofoam, as well as disposable products made of oxo-degradable plastic.

⁴⁴ European Commission. (2020). *Commission implementing regulation (EU) 2020/2151*. Official Journal of the European Union. <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32020R2151&rid=1>

⁴⁵ Former Oslo Convention and Paris Convention.

⁴⁶ OSPAR Commission. (n.d.-a). *Objectives for OSPAR Secretariat 2021-2023*. https://www.ospar.org/site/assets/files/1202/secretariat_objectives.pdf, OSPAR Commission. (n.d.-c). *The OSPAR Acquis: Decisions, Recommendations & Agreements*. OSPAR Commission. Retrieved 20 February 2023, from <https://www.ospar.org/convention/agreements>

⁴⁷ OSPAR Commission. (n.d.-b). *Overview of OSPAR's 2nd Marine Litter Regional Action Plan*. OSPAR Commission. Retrieved 20 February 2023, from <https://www.ospar.org/work-areas/eiha/marine-litter/regional-action-plan/rap2>

⁴⁸ OSPAR Commission. (2022). *The second OSPAR Regional Action Plan for the Prevention and Management of Marine Litter in the North-East Atlantic*. <https://www.ospar.org/documents?v=48554>

The Norwegian Centre against Marine Litter. (n.d.). Our mission. Retrieved 20 February 2023, from <https://www.marfo.no/en/vart-oppdrag/>

⁴⁹ Nordic Co-operation. (n.d.). *About the Nordic Council of Ministers for the Environment and Climate (MR-MK)*. Norden. Retrieved 20 February 2023, from <https://www.norden.org/en/information/about-nordic-council-ministers-environment-and-climate-mr-mk>

⁵⁰ Office of the Prime Minister. (2022, August 15). *Strengthened Nordic cooperation on oceans and climate action* [Pressemelding]. Government.No; regjeringen.no. <https://www.regjeringen.no/en/aktuelt/strengthened-nordic-cooperation-on-oceans-and-climate-action/id2924309/>

⁵¹ Arctic Council. (n.d.). *Plastics in the Arctic*. Arctic Council. Retrieved 20 February 2023, from <https://www.arctic-council.org/explore/topics/ocean/plastics/>

5.3 NATIONAL GOVERNANCE

Norway has a consensual parliamentary political culture, with traditionally strong labour unions, social democratic parties, and distinct regional identities. However, as presented in chapter 5.2, Norway is an EEA country largely influenced by EU policy. Thus, to a large extent, Norway also has common regulations with the EU on waste management and the environment, including legislation related to the handling of plastic waste. The EU Directives presented in the previous chapter have further been assessed as relevant and acceptable by the Norwegian authorities and are, according to the EEA-agreement, incorporated into Norwegian law. Objectives and requirements of the legal acts are binding for Norway, causing Norwegian authorities to be obligated to implement large parts of these frameworks in national regulations with appropriate means of action.

5.3.1 Norwegian plastic strategy

The Norwegian plastic policy is developed in collaboration with the EU. When it comes to plastics, Norway has national goals of increased recycling, zero pollution, less waste, and eliminating the use of hazardous substances.⁵² To date, packaging outweighs all other sources of plastic waste in Norway, as Mepex (2020) estimated that 209,000 tonnes of plastic packaging are discarded as waste annually. Packaging is also the most likely product to get discarded in nature as pollution.^{53,54} Moreover, Norway recently produced a plastic strategy that follows established principles in Norway's environmental policy and is a further development of the government's plastic strategy set out in the Parliament Report 45 (2016-2017) Waste as a Resource. This includes the environmental policy principle of extended producer responsibility, which is described in chapter 5.8.1. According to the Norwegian plastics strategy (2021), the strengthening of the EU's product framework will also challenge the current Norwegian environmental legislation, and thus result in substantial changes in the current legal framework for EPR schemes (p.41). This will also increase obligations for Producer Responsibility Organizations (PROs). On the national level, Norway plans to increase the levels of household waste recovered each year by strengthening its EPR scheme, as consumers still bear responsibility for plastic disposal and clean-up in their municipalities. In terms of production, Norway has a specialized plastic-producing industry with nearly 200 small to medium-sized companies that produce products ranging from construction materials and packaging to industrial materials. However, only a minuscule

portion of these products produced in Norway are consumed nationally, meaning that most of Norway's plastic on the market is imported, leading to unverifiable regulations on the production stage of materials.

5.3.2 Norwegian plastic downstream legislation

Norwegian plastic downstream legislation is mainly in accordance with the EU Waste Framework Directive⁵⁵ where the Pollution Control Act⁵⁶ constitutes the legal framework for waste management in Norway. In accordance with the Waste Framework Directive, the Pollution Control Act lays down the basic requirements for the handling of waste, which includes providing guidelines, duties and responsibilities aimed at avoiding pollution and prohibiting littering. The purpose of the Act is thus to protect the external environment from pollution and reduce existing pollution and waste, while also promoting good waste management. The Pollution Control Act also stipulates the Polluter Pays Principle, which is described in detail in chapter 5.8.1. The Pollution Control Act's overall provisions are further complemented by the Norwegian Waste Regulation⁵⁷ ("Avfallsforskriften"), which in turn implements central EU directives and regulations relating to waste in Norwegian law. The Regulation defines and regulates various types of waste, including packaging waste, and how this must be collected and processed. The Waste Regulations' chapter 6 on beverage packaging, chapter 7 on packaging waste and chapter 10a on the sorting and material recycling of bio-waste and plastic waste are necessary for Norway to comply with the EU's binding recycling targets in the Directive on Packaging and Packaging Waste and the Waste Framework Directive.

The Norwegian Waste Regulation Chapter 6

Beverage packaging is separately regulated in chapter 6 of the Norwegian Waste Regulation. The purpose of the chapter's provisions is to contribute to an effective return system, in which a high return rate for beverage packaging will prevent littering through a reduced amount of waste from such packaging. In accordance with the Ministry of Finance's regulations on special duty, an environmental tax is also set on beverage packaging to incentivize increased collection of such waste. The tax is reduced according to the return rate, in which the latter is determined by the Norwegian Environment Agency according to the expected achievements of return rates.

The Norwegian Waste Regulation Chapter 7

The purpose of chapter 7 in the Norwegian Waste Regulation is to promote separate sorting, collection, and treatment of packaging and packaging waste, and thus prevent pollution and other environmental problems. Additionally, it is stipulated that reuse and recycling of materials shall be increased by reducing the amount of packaging and ensuring that packaging and packaging waste is collected, reused and recycled. The chapter also regulates the current Norwegian EPR schemes for plastic packaging (apart from beverages), in which it is required that producers and importers who yearly supply the market with at least 1,000kg of packaging shall finance the collection, sorting, material recycling and other treatments of its resulting waste. This shall be done through a membership of an approved producer responsibility organization.

The Norwegian Waste Regulation Chapter 10a

From 1 January 2023, rules regarding the sorting of food-, plastic-, park- and garden waste from Norwegian households have come into effect. The purpose of the new chapter 10a in the Waste Regulations is to increase the material recycling rate of household and industrial waste to achieve a better resource utilization, protect the environment and reduce climate emissions. The requirements apply to municipalities, public and private businesses, and institutions that generate household waste, industrial waste, and plastic waste.

5.3.3 Handling of plastic waste

The structure of the Norwegian waste management system is complex. This is emphasized by the division of responsibility between plastic producers and the municipalities, of which logistics, responsibilities, and financial instruments differ in the value chain for plastic packaging between households and businesses. Whereas municipalities are responsible for the collection of household waste, companies are in contrast held responsible for waste management from business activities and industries. Additionally, Green Dot Norway, NORSIRK and future approved producers responsibility organizations (PRO's) who receive remuneration for plastic packaging, are, through agreements and support schemes, required to ensure that plastics from both households and the industry are materially recycled.⁵⁸ Figure 5 provides the current Norwegian law requirements for sorting and recycling plastics in accordance with the Norwegian Waste Regulation, both for producers and municipalities:

FIGURE 5 : NORWEGIAN LAW REQUIREMENTS FOR RECYCLING PLASTIC PACKAGING

Norwegian law requirements for producers, § 7-9a	Statutory duties for Norwegian municipalities, § 10a-4
<p>Obligation for producers to recycle packaging waste:</p> <ul style="list-style-type: none"> • Through 2024; 30 % plastic packaging excluding expanded polystyrene • From 2025; 47 % plastic packaging • From 2030; 52 % plastic packaging 	<p>The municipalities are responsible for sorting the following proportion of the total amount of plastic waste that can be recycled and collected from households per year:</p> <ul style="list-style-type: none"> • 50 % from 2028 • 60 % from 2030 • 70 % from 2035

⁵² Regjeringen. (2022). *Norwegian Plastics Strategy* <https://www.regjeringen.no/en/dokumenter/norwegian-plastics-strategy/id2867004/>

⁵³ In Norway, pollution is defined as solids, liquids or gases, water or ground which cause or may cause damage to the environment. Under the Norwegian Pollution Control Act, discarded plastic in nature is both littering and pollution. It is important to make the determination between waste, pollution, and littering as it determines which in the regulatory body (national, regional, municipal) is responsible for ordering cleanup.

⁵⁴ Mepex (2020): The material flow of plastics in Norway – what do we know?

⁵⁵ See sub-chapter 5.2.3.1 for more information regarding this Directive.

⁵⁶ Read more about the Pollution Control Act in chapter 5.6.1.

⁵⁷ Klima- og miljødepartementet. (2023, January 30). *Forskrift om gjenvinning og behandling av avfall (avfallsforskriften)*. Lovdata. <https://lovdata.no/dokument/SF/forskrift/2004-06-01-930>

⁵⁸ A more detailed description of the responsibility distribution is provided in chapter 5.7 about private governance and Orchestration theory.

5.3.4_The Norwegian Product Control Act

The Norwegian Product Control Act⁵⁹ aims to prevent products from causing health damage and environmental disturbances in the form of pollution, waste, and disturbance of ecosystems. The Act regulates the safety of products to the extent that they are not regulated in other legislation for similar purposes. The responsibility for product safety lies with manufacturers, retailers, importers and other providers, and includes, inter alia, the flow of information related to the necessary properties and limitations of the products.

The Product Control Acts § 4 letter B and C are of particular relevance for Norwegian plastic legislation, as they stipulate an authority to conduct regulations targeting the prevention of the above-mentioned effects of products. More specifically, this involves resolutions on the recycling of products where the necessity of increased recycling is emphasized, as well as provisions relating to eco-design and composition of products to limit pollution.

The Norwegian Product Regulation § 2b-5 stipulates an obligation to re-label certain single-use plastic products in accordance with Commission Regulation (EU) 2020/2151. The obligation comprises plastic products that are frequently inappropriately disposed of, such as sanitary products, drinking cups and tobacco products with filters that are fully or partly made of plastics. The purpose of the labelling obligation is to inform consumers of the presence of plastic in the product, the waste disposal means to be avoided for that product, and the resulting negative impact of littering or other inappropriate means of waste disposal of the product on the environment.⁶⁰

5.3.5_Action plan for climate- and environmentally friendly public procurements

In 2021, a new action plan for climate and environmentally friendly public procurement was launched, with the purpose of providing guidance and increased competence on central climate and environmental issues and procurement topics within Norway. Although action plans are not legally binding, they set the tone for upcoming regulations. The action plan will specify how Norway will utilize the potential of public procurements to support the green transition and ensure that Norway achieves its climate and environmental goals. This includes clarifying which measures must be implemented for the proportion of such acquisitions to increase, where the plan in return will contribute to these becoming effective climate and environmental policy instruments that promote the efficient use of society's resources. The included measures should, among other things, aim to avoid undesirable chemical additives in plastics, and prescribe the waste hierarchy as a guiding principle for procurement (e.g., strive to avoid unnecessary products, measures to reduce consumption, demand products for re-use and/or more recycled material in products).⁶¹ The action plan provides concrete guidance and recommendations on adjustments to the public bodies' purchasing practices and is thus not a legally binding claim.

5.3.6_Marine litter

As a marine-rich nation that deeply depends on the Oceans' resources, Norway has the ambition to become a leading nation in the field of handling marine littering and pollution. Compared to other countries, Norway is strong when it comes to legislation and measures for cleaning up and preventing such littering. Amongst others, the Pollution Control Act stipulates a general ban on land and sea littering, while the Marine Resource Act and the Aquaculture Act stipulate rules limiting harmful effects from actors in the marine sector.

Moreover, there has in recent years been a significant increase in the attention paid to the consequences of such littering. This is particularly observed within management, the research environment, and the general population, where several analyses have shown that fisheries, recreational fishing, and aquaculture are remarkable sources of marine littering.⁶² Through active participation in initiatives aimed

at preventing marine litter, Norway aims to cooperate with key countries to highlight the necessity of establishing a global framework in this field. In this chapter, we thus outline indicative actions related to plastic pollution in the marine environment.

Centre against marine litter (Marfo)

The Centre Against Marine Litter (Marfo)⁶³ was established in January 2022 as a state administrative body under the Norwegian Ministry of Climate and Environment. Their aim is to become a leading centre of expertise in the occurrence and clean-up of marine litter, as well as in the prevention of litter from sea-based sources both nationally and internationally. Through coordinating clean-up operations, special advisory and communicating international collaboration, Marfo should contribute to well-coordinated, cost-effective, and environmentally friendly clean-up work.⁶⁴ In collaboration with the Norwegian Environment Agency, country governors and other relevant authorities, Marfo will make significant contributions to joint efforts across sectors and participants both at the national and international levels.

Action plan against marine littering from commercial and recreational fisheries and aquaculture

The Directorate of Fisheries has established a five-year action plan⁶⁵ against marine litter, which in the years 2021-2026 will lay down guidelines for work on reducing marine litter from commercial fishing, recreational fishing, and the aquaculture industry. In addition, the industries will be held responsible for developing their own activities that aim to achieve the goals included in the action plan. However, the directorate will through management contribute to ensuring that environmental considerations do not come at the expense of competitiveness, efficiency, and costs among the actors.

The Marine Resource Act and the Ship Safety and Security Act

The Marine Resource Act and the Ship Safety and Security Act are both among applicable legislations for beach clean-ups. Both acts contain provisions that affect waste management and pollution from fisheries and/or the farming industry, while additionally defining prohibitions against pollution, and obligations to prevent it. The Marine Resource Act⁶⁶ regulates the extraction of marine resources in Norway and thus aims to ensure sustainable and economically-profitable management of marine resources. The law further forms a far-reaching legal basis for the Directorate of Fisheries to regulate the extraction of marine resources through various quotas. Of importance to marine plastic littering, the law requires fishermen to search for and report the extent of lost gear. The Ship Safety and Security Act⁶⁷ shall, through facilitating a high level of ship safety and safety management, as well as preventing pollution to the marine environment, safeguard life, health, property and the environment.

⁵⁹ Justis- og beredskapsdepartementet. (2021, August 24). *Lov om kontroll med produkter og forbrukertjenester (produktkontrollloven)*. <https://lovdata.no/dokument/NL/lov/1976-06-11-79>

⁶⁰ Commission Regulation (EU) 2020/2151 preamble (1).

⁶¹ Ministry of the Environment, Japan. (2022). *G20 Report on Actions against Marine Plastic Litter: Fourth Information Sharing on the G20 Implementation Framework 2022* (No. 2nd; p. 202). https://g20mpl.org/wp-content/uploads/2022/08/G20MPL-report-2022_2nd-edition_1108.pdf (page 168)

⁶² Fiskeridirektoratet. (2021). *Fiskeridirektoratets handlingsplan mot marin forsopling*. <https://www.regjeringen.no/contentassets/842f9f223bd-74870b1cd2f63be29b4a6/fiskeridirektoratets-handlingsplan-mot-marin-forsopling.pdf> (page 6)

⁶³ The Norwegian Centre against Marine Litter. (n.d.). Our mission. Marfo. Retrieved 20 February 2023, from <https://www.marfo.no/en/vart-oppdrag/>

⁶⁴ Klima- og miljødepartementet. (2022). *Hovedinstruks for Senter mot marin forsopling*. <https://www.regjeringen.no/contentassets/a659d5c2a1d842d1a11349469abf0b4a/senter-mot-marin-forsopling-hovedinstruks.pdf>

⁶⁵ Fiskeridirektoratet. (2021). *Fiskeridirektoratets handlingsplan mot marin forsopling*. <https://www.regjeringen.no/contentassets/842f9f223bd74870b1cd2f63be29b4a6/fiskeridirektoratets-handlingsplan-mot-marin-forsopling.pdf>

⁶⁶ *Lov om forvaltning av villlevande marine ressurser (havressurslova)*, (2022) (testimony of Nærings- og fiskeridepartementet). <https://lovdata.no/dokument/NL/lov/2008-06-06-37>

⁶⁷ *Lov om skipssikkerhet (skipssikkerhetsloven)*, (2021) (testimony of Nærings- og fiskeridepartementet). <https://lovdata.no/dokument/NL/lov/2007-02-16-9>

Plastic causes pollution at almost every stage of its lifecycle, from the moment it is extracted as crude oil, to its downstream disposal or incineration. Meanwhile, production continues to expand.

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5.4 COUNTY REGULATIONS ("FYLKE" AND "FYLKESKOMMUNE")

The "Fylke" is the geographical area of the 11 counties in Norway, as opposed to the "Fylkeskommune", which is the governance level for the popularly elected government for this geographical area. It is a governance level independent of the county governor's office (see 5.5), and the municipalities and their areas of management are mandated by and regulated by the national government. The county municipalities' most important tasks are secondary education, public dental health, governance of cultural heritage, some technical tasks related to roads, energy production, industrial development and finally, environmental governance.⁶⁸

5.4.1 Collaboration and promotion

A key aspect of the county municipalities' work is to initiate and facilitate collaboration across administrative levels, industries, and geographies. The county municipalities participate in or lead a wide range of regional partnerships and networks, through which regional strategies and policies are developed. Cross-sector collaboration is essential to solving the challenges posed by the green transition, and the handling of plastic waste. An example of such collaboration is found in Vestland regional municipality, which prepared a plastic strategy for the region in 2020.⁶⁹ The strategy emphasizes how important collaboration is for achieving a plastic-free nature and ocean in Vestland. One of the strategy's main goals is to facilitate that inter-municipal parties, organizations, industries, and research may contribute to solving the challenges with plastic. Furthermore, Vestland county municipality aims to reduce the use of plastic in its own operations by at least 40 % and to mobilize for reduced plastic consumption in society by 2023. As such, the county municipalities may use their platforms to promote sustainable choices that contribute to reduced plastic consumption and pollution.

5.4.2 Regional planning and development

The county municipalities are responsible for regional planning and development.⁷⁰ Regional planning is a valuable tool to manage the use of land, thereby influencing a fundamental prerequisite for, inter alia, new sorting centres and facilities to produce, e.g., plastic pellets. It is up to the county municipalities to decide which planning initiatives are to be taken. However, the Planning and Building Act stipulates a clear framework for how the role is to be exercised and what interests are to be considered. Pursuant to the Planning and Building Act § 1-1, county municipalities must ensure that the regional planning work promotes sustainable development to the benefit of individuals, society, and future generations. Similarly, it follows from the national expectations regarding regional and municipal planning for 2019-2023 that county municipalities must base their land-use planning on the United Nations' sustainable development goals.⁷¹ The county municipalities are therefore obliged to consider and prioritize sustainable solutions in their planning work, e.g., when assessing whether land should be allocated to a new plastic treatment facility. County municipalities may also require that certain waste facilities are sufficiently established before private development of an area can take place.⁷² The role of the regional planner thus provides county municipalities with important tools to reduce plastic waste.

⁶⁸ Berg, O. T., & Hansen, T. (2023). Fylkeskommune. In Store norske leksikon. <http://snl.no/fylkeskommune>

⁶⁹ Vestland fylkeskommune. (2020). Plaststrategi: Ein plastfri natur og eit plastfritt hav i Vestland. <https://www.vestlandfylke.no/globalassets/vedlegg-til-nyheitlar/plaststrategi.versjon10juli2020.pdf>

⁷⁰ The Planning and Building Act § 3-2, cf. § 3-4.

⁷¹ Ministry of Local Government and Regional Development. (2019). National expectations regarding regional and municipal planning 2019-2023. <https://www.regjeringen.no/contentassets/cc2c53c65af24b8ea560c0156d885703/nasjonale-forventninger-2019-engelsk.pdf>

⁷² The Planning and Building Act § 29-8, cf. § 20-1



5.4.3_Public procurement

County municipalities may reduce plastic consumption and pollution through sustainable public procurement. The Public Procurement Act § 5 stipulates that the county municipalities shall promote climate-friendly solutions where this is relevant and organize their procurement practices so that it contributes to reducing harmful environmental impact. This shall, inter alia, be done by taking the life cycle costs into account. Life cycle costs comprise all costs that arise in a product's lifetime, from the acquisition of raw materials or the processing of a resource to the product's disposal, discarding, or ceasing.⁷³ The county municipalities may set requirements for repairability, reusability and recyclability when procuring products containing plastic. Further, county municipalities may set requirements that exclude products containing harmful substances or require that the product wholly or partially consists of recycled plastics. As such, the county municipalities may use public procurement as a tool to prevent plastic pollution, reduce the use of harmful substances, and increase the demand for recycled plastic.

5.4.4_State aid

The county municipalities are allocated funds by the state to establish aid schemes for various causes. Occasionally, these funds are used for aid schemes that contribute to the reduction of plastic pollution, some of which the municipalities may apply for. A recent example is found in Vestland county. At the beginning of 2022, Vestland county granted NOK 800,000 to clean up plastic, prevent unnecessary use of plastic, and hinder the spread of plastic in Vestland.⁷⁴ Both municipalities and private organizations were eligible to apply for the funds.

⁷³ The Public Procurement Regulation § 4-5.

⁷⁴ Vestland fylkeskommune. (2022). *Tilskot til plastrydding*. vestlandfylke. <https://www.vestlandfylke.no/Klima-og-natur/klimaomstilling/tilskot-til-plastrydding-og-forebygging-av-unodig-bruk-av-plast-og-spreiing-av-plast-i-vestland/>

⁷⁵ The Pollution Act § 81 b.

⁷⁶ <https://lovdata.no/pro/#document/RDEP/rundskriv/t-2012-3?from=NLO/1981-03-13-6/%C2%A711>

⁷⁷ Please note that the authority does not include waste incineration plants covered by the Waste Regulation chapter 10, treatment facilities for hazardous waste, and facilities for scrapping decommissioned offshore installations.

⁷⁸ The Pollution Act § 29 first paragraph.

⁷⁹ The Pollution Act § 27a second paragraph.

⁸⁰ The Pollution Act § 32. third paragraph.

⁸¹ The Pollution Regulation § 10-4.

⁸² The Pollution Regulation § 10-4 fourth paragraph.

5.5_COUNTY GOVERNORS' ("STATSFORVALTER")

The county governor is the state's representative in the county, performing administrative tasks on behalf of the ministries. The county governor is, inter alia, responsible for following up on decisions, targets, and guidelines from the Norwegian Parliament (Stortinget) and the Government, thereby functioning as an important link between the municipalities and the central authorities.

Among areas of responsibility, the county governors' climate and environmental protection department is responsible for following up on the implementation of national climate and environmental policy in the counties. This implies keeping an overview of the state of the environment within the county governors' area, e.g., processing licenses in accordance with the Pollution Control Act, while additionally ensuring climate- and environmentally-friendly development within this field.

5.5.1_Pollution authority

The Pollution Control Act imposes several important responsibilities on the county governor as pollution authority.⁷⁵ The distribution of authority according to the Pollution Control Act has gradually become complicated and, today, the county governors' responsibilities are primarily stipulated in a circular letter from the Ministry of Climate and Environment.⁷⁶ There, it follows that the county governor is responsible for, inter alia, waste facilities pursuant to the Pollution Control Act § 29 first paragraph, which stipulates that anyone who operates a storage site or waste treatment facility that may cause pollution or appear unsightly must have a permit. It is the county governors that grant permits for the operation of waste facilities pursuant to § 29 first paragraph.⁷⁷ When issuing permits, the county governors may set requirements for the transport, treatment, recycling, and storage of waste, and impose measures to prevent the facility from appearing unsightly.⁷⁸ The county governors may, e.g., set requirements for how much plastic the facility may receive and store, and how the plastic shall be stored pending further treatment. Moreover, the county governors may require that waste management shall be organized to ensure the highest possible degree of sorting and recycling.

In addition to the above, the county governors shall supervise the handling of industrial waste according to the Pollution

Control Act § 32. The term industrial waste comprises plastic and other waste fractions that arise from industrial activities.⁷⁹ The Pollution Control Act § 32 requires producers of industrial waste to ensure that such waste is taken to a legal waste facility or undergoes recycling so that it either ceases to be waste or becomes useful by replacing materials that otherwise would have been used. It is the county governors' responsibility to ensure that industrial waste is treated according to § 32. In that regard, county governors are given the authority to instruct producers to deliver industrial waste to municipal waste facilities.⁸⁰

Furthermore, county governors function as pollution authorities for several matters under the Pollution Regulation. Most relevant to this report is the county governors' responsibility for the incineration of waste under chapter 10. Incineration is often used to dispose of plastic waste that is not recycled or reused in any other way. According to the Pollution Control Act § 10-4, such incineration requires a permit which at least must contain the requirements stipulated in appendix VII to chapter 10, e.g., a list of waste fractions that may be treated at the facility and a description of the methods that will be used to measure emissions. It is the county governors' responsibility to grant permits for incineration facilities and subsequent emissions.⁸¹ When issuing such permits, county governors are given authority to set additional conditions or stricter conditions than chapter 10 demands based on local conditions and characteristics of the incineration facility in question.⁸² The county governors may, e.g., require that the company continually assess what measures may be implemented to achieve the most energy-efficient production possible.

5.5.2_Appellate body

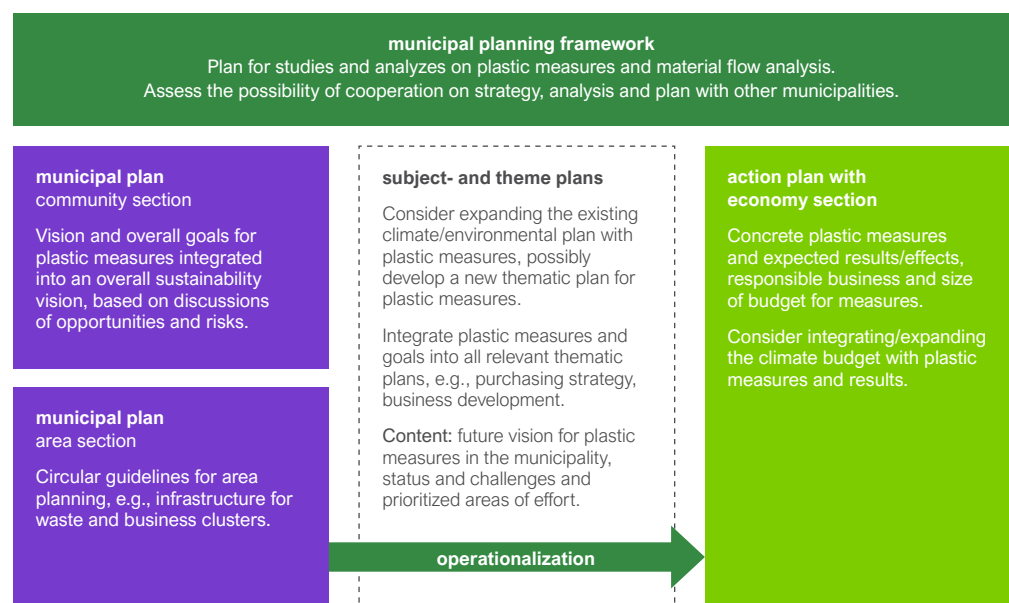
The county governor is an appellate body for individual decisions made at the municipal level under the Pollution Control Act and related regulations unless the municipality is given authority directly in the law. Nevertheless, if the individual decision is made in the municipal council in the first instance, the county governor is the appellate body, even if the municipality is given authority directly in the law. This applies unless otherwise stated in the Pollution Control Act § 85 or in a decision according to § 85.

5.6 MUNICIPALITY ("KOMMUNE")

The 365 Norwegian municipalities⁸³ have littering authority and are responsible for waste management for households in Norway. An increasing number of municipalities are drawing up action plans for plastics. However, the municipalities have, in part, different waste systems, in which different local challenges regarding waste management make it difficult to see coherent action. Municipalities also have varying degrees of experience with the plastic problem. Some areas have state-of-the-art technology in recycling plants, while other smaller municipalities do not. There are also differences between coastal municipalities, which to varying degrees see plastic accumulating in harbor basins etc., depending on ocean currents.

All municipalities must develop a municipal plan with a community section and an area section. The municipal plan outlines goals for the next years, the subject- and theme plans describe strategies to reach the goals and the action plans set out concrete measures. The municipalities can choose whether they want to include sustainability as a topic in their goals, strategies and measures or not. They can also decide the level of detail in their municipal plan with associated theme plans and action plans. Figure 6 is an example of how municipalities can implement goals and measures for plastic reduction in their established planning framework.

FIGURE 6 : MUNICIPAL PLANNING FRAMEWORK



5.6.1 National waste regulations in the municipalities

Municipalities are subject to several national regulations regarding waste management and the handling of plastics.

The municipalities are required by the Pollution Control Act to collect and treat household waste.

- According to *the Pollution Control Act § 7*, the municipalities have a duty to handle waste in such a way that there is no contamination or risk of contamination, as well as no littering.
- According to *the Pollution Control Act § 30*, the municipalities have a duty to ensure the collection of household waste. The duty includes the transport of waste from the household to the correct place for treatment. The municipalities can delegate the responsibility of collection to a third party. However, the superior responsibility lies with the municipalities.
- According to *the Pollution Control Act § 29*, the municipalities must have facilities for the storage or treatment of household waste, and they have a duty to receive such waste. The Pollution Control Act also requires that the municipalities have control over what kind of waste they receive, how much waste they receive and how the waste is stored.

- According to *the Pollution Control Act § 34*, the municipalities' statutory waste management shall be financed through waste fees. The charge is paid by the owners of properties that are covered by the statutory collection scheme for household waste and is determined in accordance with the full cost principle. This is meant to ensure that all relevant costs associated with household waste management are covered.

The Norwegian Waste Regulation ("*Avfallsforskriften*") complements the Pollution Control Act and is also the regulation where Norway implements EU Directives regarding waste into Norwegian laws.⁸⁴

As of 2023, there are new requirements in the Norwegian Waste Regulation which state that the municipalities must sort out plastic waste and deliver it to material recycling. Furthermore, the municipalities will be obligated to sort out 70 % of the plastic waste from households by 2035 (see Figure 5).⁸⁵ The Ministry of Climate and Environment estimates that the new requirements will increase the amount of plastic waste recycling from 23 % in 2016 to 52 % in 2035.⁸⁶

5.6.2 Other management tools

The municipalities may use different tools to establish both binding and non-binding requirements for their handling of plastic. Municipalities use waste plans as non-binding documents to present waste strategies and KPIs for waste management. The waste plans are an important working tool for the municipalities and are, to a certain extent, binding because they are publicly shared. It is also possible for the municipalities to shape their waste management through local waste regulations, pursuant to the Pollution Control Act § 30. Several municipalities use their local waste regulation to require that certain types of waste be kept separate when collected at the household.

As mentioned in chapter 5.6.1, the municipalities have the possibility to delegate the responsibility of collection to a third party. It is common in Norway that several municipalities become joint owners in an inter-municipal company (IKS).

The IKS has full responsibility for waste management in the owner-municipalities. As owners of the IKS, the municipalities can control and make demands about the management processes. As mentioned in chapter 5.4, the county municipalities may reduce plastic consumption and pollution through sustainable public procurement. The Public Procurement Act also applies to the municipalities at the same rate as the county municipalities, pursuant to the Public Procurement Act § 1-2. As such, the municipalities may also use public procurement as a tool to prevent plastic pollution, reduce the use of harmful substances, and increase the demand for recycled plastic.

5.6.3 Plastic waste in Norway and Abroad

As stated above, the national requirements leave it up to the municipalities to decide how waste management is implemented in each area. Thus, it varies how the municipalities have solved the issue of collecting plastic packaging and plastic waste from households. Some municipalities and IKSES offer source sorted collection of plastic packaging at the household. Some IKSES have invested in advanced sorting facilities for plastic. Other municipalities and IKSES have not implemented a collection of plastic packaging yet. Regardless of the collection scheme at the household, most municipalities and IKSES have staffed waste sorting facilities where households can bring their plastic waste to the facility to get it sorted and sent to recycling.

According to Green Dot Norway, plastic packaging collected from municipalities and/or IKSES is pressed and shipped off to larger facilities, mostly (72%) in Northern Germany, as Norway has limited options for recycling their own plastics from household waste.

Since the collection scheme varies across the municipalities, there is a varied degree of plastic waste sorted from households across Norway. Statistics from SSB show that municipalities connected to an automatic waste sorting facility collect significantly more plastic waste than municipalities that offer source sorting at the household.⁸⁷

⁸³ Moderniseringsdepartementet, K. (2021, October 12). Historisk utvikling [Redaksjonellartikkel]. Regjeringen.no; regjeringen.no. <https://www.regjeringen.no/no/tema/kommuner-og-regioner/kommunestruktur/utviklingen-av-den-norske-kommunestruktur/id751352/>

⁸⁴ Read more about the Norwegian Waste Regulation in chapter 5.3

⁸⁵ Miljødirektoratet. (2022, June 24). *Nye krav til kjeldesortering og materialgjenvinning*. Miljødirektoratet/Norwegian Environment Agency. <https://www.miljodirektoratet.no/aktuelt/fagmeldinger/2022/juni-2022/nye-krav-til-kjeldesortering-og-materialgjenvinning/>

⁸⁶ Klima- og miljødepartementet. (2022, June 7). *Strengere krav til kildesortering av avfall* [Nyhet]. Regjeringen.no; regjeringen.no. <https://www.regjeringen.no/no/aktuelt/strengere-krav-til-kildesortering-av-avfall/id2917708/>

⁸⁷ Deloitte. (2022). *Kunnskapsgrunnlag: Kommunesektorens arbeid med sirkulær økonomi* (pp. 1–72). <https://www.ks.no/contentassets/6bd4ca946876429698d8299339ab351f/KS-Rapport-Sirkuler-Okonomi-Deloitte-2022.pdf>

Norway currently has two advanced sorting facilities for plastics. One is in Eastern Norway and is operated by ROAF IKS, which serves over seven municipalities and 200,000 residents. The other facility is located in Stavanger and is operated by IVAR IKS, which serves 12 municipalities. The facility in Stavanger was damaged in a fire in July 2022, but is planned rebuilt. Both automatic sorting facilities sort out plastic by polymers (HDPE, LDPE, PET and PP). Moreover, two additional plants are planned in Fredrikstad and Trondheim. ROAF IKS sells sorted plastic waste,⁸⁸ whilst IVAR IKS washes the plastic and turns it into new plastic pellets. IVAR IKS sells both washed plastic flakes and re-granulated plastic pellets to different companies that then use it directly in the production of new plastic products.⁸⁹

5.6.4 Public-private partnerships

One of the roles of the municipality is to develop the community in cooperation with the citizens and the industry (see Table 2). As such, they can initiate collaboration between municipalities, industries, and organizations to advance innovation, knowledge, competence, and development across regions. Municipalities can also initiate public-private partnerships and ask for funding by Innovation Norway.⁹⁰

An example of a public-private partnership is the strategic waste management collaboration “SeSammen” (“Look together”) in mid-Norway. The partnership consists of 94 owner-municipalities and 12 inter-municipal waste companies distributed over four counties. The members in the partnership have developed a regional waste strategy for mid-Norway, with a common set of values, focus areas, goals and measures. As the name of the partnership states, their vision is to “look together” when planning and facilitating waste management across the municipalities, and work for socially responsible circular resource utilization in line with the waste hierarchy.⁹¹

Other examples of public-private partnerships are industry clusters and circuit parks (“kretsløpsparker”). Industry clusters are typical industries with synergies that are placed in the same geographical area, for example, the industry park in Mo i Rana, or Øra in Fredrikstad municipality.⁹² An example of a circuit park is found in Hamar municipality, called Sirkula circuit park. Sirkula is a modern waste management facility geared towards reuse, tool sharing and sharing knowledge about the circular economy.⁹³

Fredrikstad municipality and Viken county have been awarded 14 million NOK from Horizon Europe for a circular economy project called TREASoURcE (Territorial and regional demonstrations of systemic solutions of key value chains and their replication to deploy circular economy). The project is a collaboration between Fredrikstad municipality, Viken county and 15 partners from seven different nations in Europe.

ROAF inter-municipal waste company has worked to inform plastic packaging producers about which plastic packaging is most suitable for recycling. As a result of their work, some plastic packaging producers have changed the design of their products.⁹⁴

⁸⁸ ROAF. (n.d.). *Om ROAF*. ROAF: Romerike avfallsforedling IKS. Retrieved 22 February 2023, from <https://roaf.no/om-roaf/>

⁸⁹ IVAR. (2018, September 13). *IVAR ettersorteringsanlegg Forus*. <https://www.ivar.no/ettersorteringsanlegg/>

⁹⁰ KS-rapport s. 25: Deloitte. (2022). *Kunnskapsgrunnlag: Kommunesektorens arbeid med sirkulær økonomi* (pp. 1–72). <https://www.ks.no/contentassets/6bd4ca946876429698d8299339ab351f/KS-Rapport-Sirkuler-Okonomi-Deloitte-2022.pdf>

⁹¹ Tuvin, A. J. (2020). *SeSammen—En studie i et regionalt avfallssamarbeid*. Handelshøgskolen Innlandet – Fakultet for økonomi for samfunnsvitenskap – Institutt for organisasjon, ledelse, styring. 20_05103-5 Masteroppgave 2020 - SeSammen - en studie i et regionalt avfallssamarbeid 524542_1_1.PDF (inn.no)

⁹² KS. (2018, September 24). *Næringsklynger*. KS. <https://www.ks.no/fagomrader/samfunnsutvikling/miljo/sirkular-okonomi-og-avfallspolitikk/gode-eksempler/naringsklynger/>

⁹³ Sirkula. (n.d.). *Kretsløsparken*. Retrieved 22 February 2023, from <https://www.sirkula.no/gjenvinningsstasjoner/kretsløsparken/>, Deloitte. (2022). *Kunnskapsgrunnlag: Kommunesektorens arbeid med sirkulær økonomi* (pp. 1–72). <https://www.ks.no/contentassets/6bd4ca946876429698d8299339ab351f/KS-Rapport-Sirkuler-Okonomi-Deloitte-2022.pdf>

⁹⁴ ROAF. (2021). *Års- og miljørapport* (pp. 1–29). <https://roaf.no/wp-content/uploads/2022/05/9087-A%CC%8Arsrapport-ROAF-2021-interaktiv.pdf>

The regulatory landscape for plastics governance in Norway and abroad is fragmented though, and nested within multiple layers of overlapping global, regional, local and industry-focused initiatives

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5.7_PRIVATE GOVERNANCE AND ORCHESTRATION

Private governance is an important component of governing plastics. It involves guidelines and standards that include a multitude of stakeholders and organizations via a bottom-up process (Graz 2022). Some studies argue that private governance can overcome the implementation issues that can follow a top-down structure, which in turn addresses transparency by involving more organizations in the process of governance.

A way to visualize this in action is by utilizing orchestration theory within the framework of plastic governance. Orchestration theory means bringing "...third parties into the governance arrangement to act as intermediaries between itself and the targets, rather than trying to govern the targets directly." More specifically, an Orchestrator works through Intermediaries to govern a Target; also known as the O-I-T model.⁹⁵ This strategy of indirect governance entails that an Orchestrator – often an IGO -identifying (in this case UNEP), enlists and/or allows open and transparent support of voluntary cooperation of intermediary actors. This could be in the form of a state or business association or networks of NGOs for example, that will then contribute to reaching a given target, such as a global treaty to end plastic pollution. This can be used when goals and ambitions are high, but governance capacities on the ground are low and clouded with conflict (Ferraro and Failler 2020)⁹⁶, and in the case of plastics, also fragmented and uncoordinated before the start of the global treaty negotiations. These are intermediaries that have goals and capabilities that are needed to govern or provide benefits toward policy targets, such as targets aimed at reducing plastic pollution.

5.7.1_NGOs

There is a large range of non-governmental organizations working towards the target of creating a global, legally binding treaty to end plastic pollution. NGOs have long experienced having influence and providing input to the policy-making process at all levels of governance. They represent and support the views of society, contribute to the literature on law-making and work to ensure the effective implementation of policies. NGOs can be presumed to be more efficient and flexible at providing input to policymakers, as they are smaller than governments and have less red tape to get through.⁹⁷ In preparation for the second round of negotiations on a global treaty to end plastic pollution, hundreds of stakeholders provide written submissions for potential elements the treaty may include, therefore providing input to the policymaking process. As the levels of influence and topics of importance vary between regions and NGOs, we highlight two important NGOs in the Norwegian context below.

WWF

The World Wildlife Fund (WWF) is one of the world's largest and most experienced independent conservation organizations, with over 5 million supporters and a global network active in more than 100 countries. WWF Norway leads the support for mobilization and policy work for a new global treaty to end plastic pollution on behalf of the larger network. In Norway, WWF also collaborates with municipalities (through their program called "Plastsmarte Byer og Kommuner") and gives inputs to policy makers at both the national and local level.

Naturvernforbundet

Naturvernforbundet (Eng: The Norwegian Society for the Conservation of Nature, also known as Friends of the Earth Norway) is amongst Norway's largest and oldest nature and environmental conservation organizations, and is the Norwegian representative of Friends of the Earth, which is the world's largest network of environmental organizations. Their area of work mainly targets a wide range of environmental and nature conservation matters, including climate, energy and transport. As a democratic membership organization, their work is based on volunteer actions amongst the members, such as their involvement in clean-up campaigns led by Keep Norway Beautiful. Naturvernforbundet is also involved in international work aimed at strengthening local environmental organizations' power to influence important environmental issues.

5.7.2_Global Partnership on Marine Litter

Norway is a part of The Global Partnership on Marine Litter (GPML), launched at the United Nations Conference on Sustainable Development in June 2012. GPML is a multi-stakeholder partnership created to bring together actors working on marine litter and plastic pollution prevention. Their mission is to seek to protect the global marine environment and biodiversity, human well-being and animal welfare by addressing the global problem of marine litter and plastic pollution, including microplastics.⁹⁸

5.7.3_Labels

The new Public Procurement Act which entered into force in 2017, as described in chapter 5.4.3, requires national-, regional- and municipal authorities, as well as other public bodies, to "adapt their procurement practices to reduce harmful environmental impacts and promote climate-friendly solutions where relevant" (Norwegian Ministry of Climate and Environment 2022)⁹⁹. The Act opened for more offensive use of labelling schemes and environmental management systems in public procurements, with the intention of safeguarding environmental concerns and ensuring social and ethical standards. Labelling schemes or certificates aim to simplify the assessment of environmental documentation from providers, while at the same time providing consumers with information about how products and services meet certain requirements for sustainability in production and/or product properties.

When it comes to labels, Norway has over 100 different labels that can be found on products at supermarkets. The Norwegian Consumer Council has compiled a guide of the most common ones, in which the Nordic Swan Ecolabel is the most relevant to plastics. The Swan is the official Nordic ecolabel and sets environmental requirements for products in a life-cycle perspective – from extraction of raw materials, through production and use, and up to the product's end of life. This includes encouraging sustainable consumption and requirements regarding the use of renewable or recycled materials. The ecolabel thus confirms whether a product has certain environmental properties, i.e., that the performance acquired does not maintain certain negative environmental consequences. The following Figure 8 demonstrates an example of these types of labels at the EU level.

As presented in subchapter 5.3.4, the Norwegian Product Regulation also sets requirements for re-labelling certain single-use plastic products. This includes marking products that are made wholly or partly out of plastic and intended for single use, such as drinking cups, sanitary items, wet wipes and cigarettes with filters. The products are marked differently depending on where they usually cause a negative influence on the environment due to littering. The harmonized marking specifications are shown in Figure 7 and shall apply in all EU and EEA countries.

FIGURE 7 : HARMONISED MARKING SPECIFICATIONS¹⁰⁰



⁹⁵ Abbott, K. W. and D. Snidal (2009). "Strengthening international regulation through transnational new governance: Overcoming the orchestration deficit." *Vand. J. Transnat'l L.* 42: 501

⁹⁶ Ferraro, G., and Failler, P. (2020). Governing plastic pollution in the oceans: institutional challenges and areas for action. *Environ. Sci. Policy* 112, 453–460. doi: 10.1016/j.envsci.2020.06.015

⁹⁷ Tortajada, C. (2016). Nongovernmental organizations and influence on global public policy. *Asia & the Pacific Policy Studies*, 3(2), 266-274.

⁹⁸ UNEP. (n.d.). *Global Partnership on Marine Litter (GPML)*. <https://wedocs.unep.org/bitstream/handle/20.500.11822/40729/GPML%20FrameWork%2722%20i.pdf?sequence=1&isAllowed=y>

⁹⁹ <https://www.regjeringen.no/contentassets/a78ecf5ad2344fa5ae4a394412ef8975/en-gb/pdfs/stm202020210013000engpdfs.pdf>

¹⁰⁰ European Commission. (2020). *Commission implementing regulation (EU) 2020/2151*. Official Journal of the European Union. <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32020R2151&rid=1>

5.7.4 Standards and Certifications

Global Standards develop a set of common principles, integrity and transparency within international business and finance.¹⁰¹ Standards include a wide range of instruments (financial, policy, etc.) that fall under private governance, as they allow for corporations to apply, claiming that their business achieves a common set of standards which then results in a certification if approved. The certification benefits both the business and consumer by ensuring that certain sets or principles are followed by a company. The International Organization for Standardization (ISO) is an excellent example of this when it comes to plastic. ISO has a number of standards covering waste recovery and recycling, environmental aspects and impacts,¹⁰² as well as production quality control.

5.7.5 The extended producer responsibility scheme

Extended producer responsibility (EPR) is an environmental policy principle in which a producer's responsibility for a product is extended to the post-consumer stage of a product's life cycle (Deloitte, 2019, p.12), i.e., holding manufacturers and brand owners accountable for the end-of-life impacts of their plastic products and packaging. The EPR scheme can thus be understood as a waste responsibility exchange, involving both an economic and a physical responsibility shift upstream from municipal authorities to producers (A. Pires et al., 2015, p. 343). In practice, this involves producers taking responsibility for the collection of end-of-life products, as well as sorting them before their final treatment, which ideally involves recycling. By reducing the burden on public budgets, while also encouraging producers to optimize the cost efficiency of collection and recycling processes, EPR encompasses a financial benefit resulting in lower waste management costs. This suggests that EPR is one of several necessary tools needed to achieve a more sustainable value chain, as the incentive given to the producers will have an environmental contribution to waste management, while potentially providing higher recycling rates.

Moreover, EPR builds on the principle of polluter-pays (PPP). In many countries, PPP has a prevailing implementation involving the use of an environmental tax determined proportionally to the number of emissions of polluting substances. As a guiding principle at both European and international levels, EPR assures that the actors placing products onto the market, i.e., the producers of waste, should cover the expenses associated with litter clean-up while additionally guaranteeing a high level of protection of both the environment and human health. In that case, the payment for negative environmental impacts will initiate an instrument of environmental regulation, intentionally incentivizing producers to incorporate environmental considerations in their product designs, which in turn contributes to reduced pollution. Through improving the product's design, EPR incorporates two main goals; to optimize environmental performance and minimize the costs of end-of-life management. As a result, the extended producer responsibility scheme covers both upstream and downstream stages of a product's life cycle (Deloitte, 2019, p.13).

5.7.6 Extended producer responsibility in Norway

As mentioned in chapter 5.1, the structure of the Norwegian waste management system is characterized by a complexity that lies in the division of responsibility between plastic producers and municipalities. The current Norwegian EPR schemes are regulated in the Norwegian Waste Regulation by chapters six and seven,¹⁰³ and are distributed between producers, retailers, collectors, waste management facilities (including municipal facilities), return companies and waste treatment facilities.¹⁰⁴

In Norway, producers exert their extended responsibility through Producer Responsibility Organizations (PROs). These are organizations that financially and on an organized level carry out the collection and/or recycling of end-of-life products on behalf of their members. Furthermore, the Norwegian way of sharing responsibility between producers and municipalities can be referred to as a hybrid model, implying a shared operational responsibility between the municipalities and the producers. An overview of the actors' areas of responsibility is given in Figure 4.

5.7.7 Producer responsibility organizations

The current Norwegian EPR scheme for plastic packaging (excluding plastic PET bottles) is characterized by the Producer Responsibility Organizations (PROs) having a financial responsibility and partial organizational responsibility for the collection and further handling of plastic packaging waste (Deloitte, 2019, p.17). In accordance with the regulations, all producers and importers supplying the market with at least 1,000 kg of packaging per year shall fund the collection, sorting, recycling and other processing activities for plastic packaging through membership in a producer responsibility organization that has been approved by the Norwegian Environment Agency, cf. § 7-5. The Regulation stipulates that the producer shall be responsible for carrying out the provisions in the regulation if the PRO is prevented from doing so. It should however be noted that much falls outside the scope of the PROs, i.e., if the number of plastics is lower than 1,000 kg, the producers are not required to participate.

Producer responsibility organizations for plastic packaging

As of September 2022, Grønt Punkt Norge AS and NORSIRK AS are the two non-profit organizations approved as PROs for plastic packaging in Norway. Grønt Punkt Norge is owned by the material companies for packaging, in which Plastretur AS is the material company for plastic packaging. NORSIRK was on the other hand first approved as a PRO for plastic packaging (and other packaging) by the Norwegian Environment Agency in September 2019, through their subsidiary Emballasjegjenvinning AS. Prior to September 2019, NORSIRK had been the PRO for electronic waste and batteries since 1998. The arrival of NORSIRK as a PRO for packaging stimulates competing practices within the market. Both PROs are through agreements and support schemes contributing to the recycling of plastic from households and the commercial and industry sectors. Responsibilities, logistics and financial instruments in the value chain for plastics do however differ between the numerous waste streams. Municipalities are responsible for the collection of household waste, while businesses are held responsible for handling waste themselves in the industry sector.

FIGURE 8 : OVERVIEW OF THE PRODUCER RESPONSIBILITY SCHEME IN NORWAY



¹⁰¹ OECD. (2022). *Why a Global Standard for a stronger, cleaner, fairer economy?*

¹⁰² ISO 15270, Plastics — Guidelines for the recovery and recycling of plastics waste

¹⁰³ See chapter 5.3.1 regarding the Norwegian Waste Regulation

¹⁰⁴ Miljødirektoratet (2022). *Videreutvikling av produsentansvaret i Norge.*

Producer responsibility organization for bottles and cans
 Infinitem is the PRO for beverage bottles and cans and is covered by a separate legal framework, i.e., chapter six of the Norwegian Waste Regulation. Since 1999, they have been the leading actor in the Norwegian deposit return scheme (DRS), which is an effective collection and recycling initiative for beverage bottles and cans. The purpose of the scheme is to prevent cans and bottles from becoming waste by turning them into new high-quality products. Moreover, incentives to increase the collection rate of the deposit scheme-related products are provided by applying a publicly determined environmental tax on beverage packaging, in which the tax rate depends on the return percentage. The consumer buy-in is achieved through a deposit fee paid by the consumer at the store but repaid when they return the bottles.⁹ In cooperation with consumers and producers, a collection rate of 98% has been achieved in recent years, diminishing the environmental tax in Infinitem's systems to zero. In addition, more than 90% of cans and bottles are deposited, in which all of it is recycled and can be reused up to 25 times. By paying a fee to Infinitem and marking bottles with the deposit mark, everyone who produces or imports beverages in recyclable plastic PET bottles can become a part of the DRS. It is not mandatory for manufacturers and importers of beverage packaging to become a part of the scheme, however, those not connected to the DRS are required to be a member of an approved PRO.

5.7.8_Norwegian Retailers' Environment Fund ("Handelens Miljøfond")

In 2015, the EU introduced a directive on plastic bags (Directive (EU) 2015/720) amending Directive 94/62/EC on packaging and packaging waste. The directive on plastic bags was introduced to reduce the consumption of light-weight plastic carrier bags, as plastic bags are one of the top ten littered items in Europe.¹⁰⁵ The Directive established that the member states had two alternatives; (1) the adoption of measures to ensure that the annual consumption level by 2019 will not exceed 90 plastic carrier bags per person and 40 plastic carrier bags per person by 2025, or (2) the adoption of instruments ensuring that plastic carrier bags are not provided free of charge.¹⁰⁶

In 2017, the Ministry of Climate and Environment and the Norwegian grocery, retail and trade sectors agreed to meet the EU directive on plastic bags through the establishment of the Retailers' Environment Fund (Handelens Miljøfond). The fund is owned and operated by relevant actors in the grocery, retail and trade sectors in Norway. The members of the fund are required to place a fee on all plastic carrier bags they sell to customers and pay a contingent of 1 NOK to the fund per plastic carrier bag they buy or sell. The members trade over 80 % of the total number of plastic carrier bags in Norway, including around 70 retailer chains and 10 000 points.¹⁰⁷

The Norwegian Retailers' Environment Fund has three main goals: prevent and clean up plastic pollution, not least in relation to marine littering, reduce the use of plastic carrier bags and increase resource efficiency by supporting measures to increase plastic recycling.¹⁰⁸ The annual report for 2021 shows that the fund has allocated 600 MNOK to almost 500 environmental projects since they started in 2018. The projects have contributed to the clean-up of over 4000 tons of plastic from nature and increased the use of recycled plastic by over 9000 tons. In 2021, the fund assigned 253 MNOK to 155 environmental projects.¹⁰⁹

The total consumption level of plastic carrier bags has declined by 18 % since 2016, but Norwegians still used 151 plastic carrier bags per person in 2021. To meet this challenge, the Norwegian Retailers' Environment Fund increased the contingent from 0,50 NOK to 1 NOK as of January 1st, 2022.¹¹⁰ There are numerous other organizations in Norway that focus on the clean-up and reuse of plastic materials. For the sake of this report, we have given the following two as examples:

Keep Norway Beautiful – Clean Ups

Keep Norway Beautiful (KNB) is a non-profit organization that coordinates volunteer clean-up efforts, primarily targeted at Norwegian beaches and coastlines. Additionally, Keep Norway Beautiful is involved in prevention work, which aims at raising awareness regarding the damage plastic products can cause on the environment, both on land and in water. This includes identifying sources and causes of litter, as well as developing measures and action plans against it. Moreover, KNB provides yearly reports based on registered litter data, which gives valuable insights to the composition and likely origin of marine litter.

LOOP

LOOP is a non-profit foundation established in 2000 to increase awareness about recycling and reuse amongst citizens in Norway. LOOP is financed through contributions from producer responsibility organizations, municipalities, inter-municipality waste companies, subsidy schemes and other public and private business. They also receive yearly funding from the Norwegian Environment Agency. LOOP has three focus areas: LOOP Environment School, Recycle (Sortere) and LOOP Communication and Insight. Their Environment School offers free teaching resources about sustainability, recycling, source sorting and environment for schools and kindergartens. Recycle is a database and a service where citizens and businesses can find answers to how they should recycle their waste. LOOP Communication and Insight is a service that develops tools, campaigns and projects that have recycling, source sorting and environment as a common theme. One of the projects LOOP initiated in 2021 is "The ocean starts here" ("Havet begynner her"), a collaboration project between LOOP and Keep Norway beautiful, funded by the Norwegian Environment Agency. The project seeks to establish a strategic network for facilitating collaboration against littering in cities and the ocean.

¹⁰⁵ European Commission. (n.d.). *The Plastic Bags Directive*. Environment Ec Europa. Retrieved 22 February 2023, from https://environment.ec.europa.eu/topics/plastics/plastic-bags_en

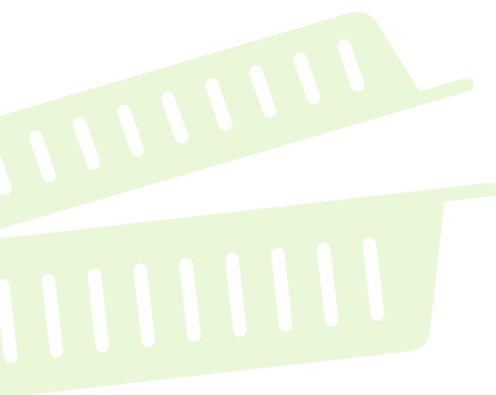
¹⁰⁶ *Directive (EU) 2015/720 of The European Parliament and of The Council*. (2015). Official Journal of the European Union. <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32015L0720&from=EN>

¹⁰⁷ Handelens Miljøfond. (n.d.). *Om Handelens Miljøfond*. Handelens Miljøfond. Retrieved 22 February 2023, from <https://handelensmiljofond.no/organisasjonen>

¹⁰⁸ Handelens Miljøfond. (n.d.). *Om Handelens Miljøfond*. Handelens Miljøfond. Retrieved 22 February 2023, from <https://handelensmiljofond.no/organisasjonen>

¹⁰⁹ Handelens Miljøfond. (2021). *Årsrapport 2021* (pp. 1–55). <https://dl8y9d78cbd9m.cloudfront.net/PDF/A%CC%8Arssrapport-2021.pdf>

¹¹⁰ Handelens Miljøfond. (2021). *Årsrapport 2021* (pp. 1–55). <https://dl8y9d78cbd9m.cloudfront.net/PDF/A%CC%8Arssrapport-2021.pdf>



06 CONCLUSION

The findings presented in this report have detailed the various levels of governance for plastics in Norway, from the municipal level up to the global level. The report has demonstrated that in the Norwegian system, governance of plastics is complicated, especially with regard to determining who is responsible for each phase of a product's life. At the regional level, Norway partakes in the EEA agreement, allowing them to take part in the EU's single market while subsequently taking on new regulations from the EU. Through the EEA agreement, Norway adheres to numerous directives and regulations which focus on measures for preventing waste, and an example of this is using more recycled content (50% by 2025 on packaging). There were also numerous examples of regional cooperation, such as monitoring sources of pollutants and recommending pathways for mitigation at both the Arctic and Nordic levels. Meanwhile, the global level of regulation is currently focused on waste, especially in the marine environment – whether it comes to soft law (ocean charters, global partnerships) or hard law (MARPOL), the focus has up until now been on waste and end of life. However, two new global agreements have recently recognized the importance of plastic pollution governance in their text. These agreements include the the Biodiversity Beyond National Jurisdiction Treaty (BBNJ)¹¹¹ (adopted March 2023), which has elimination of plastic pollution in their preamble,¹¹² as well as the Global Biodiversity Framework as part of the Convention on Biological Diversity (CBD)¹¹³, which includes a specific target for reducing and eliminating plastic pollution.¹¹⁴ Both agreements focus on the downstream phases of the plastic lifecycle. In looking ahead, finding solutions that cover the upper and mid-stream phases of plastic regulation will be vital in implementing an effective plastic treaty. As the negotiations on a global plastics said treaty to govern the full life cycle of plastics are underway, it's important to understand what regulations are in place at both the national and local levels, and find best practices and obstacles to identifying in a global treaty.

The key findings from a Norwegian perspective (national & municipal) are that the current legal frameworks concentrate on plastic materials after it has become waste. Waste regulation in Norway includes the promotion of separation and sorting, as well as incentives that require producers to take responsibility for waste. However, without knowledge of the sheer amounts of plastic entering the Norwegian market and economy it is hard to thoroughly monitor the effectiveness of our current regulations. It is therefore recommended to require all organizations to report on plastic materials produced, used, traded, and disposed of to get a better understanding of where to best tackle the source of the problem. Another aspect from the municipal level was the need for more advanced sorting systems across municipalities (currently there are only two running, with plans for more in the future). Municipalities should share best practices and find ways to have similar sorting systems across the country. This will likely require assistance from the national level or public-private partnerships. No country has a magic bullet to stop plastic pollution – it will take a global effort. Nonetheless, it is clear that now is the time to act, as UN member states are currently negotiating a treaty that will cover the entire lifecycle of plastics. Monitoring efforts at all levels of governance should be put in place to provide full transparency of materials throughout the life cycle. A legally binding global agreement on plastics could include bans, phase-outs, taxes on virgin plastics, market-based solutions, and EPR schemes (which include recovering and recirculation into the circular economy). The plastics agreement must consider challenges between and within nations and include a fund to ensure that no countries are left behind in the transition to implement the future agreement. Scholars of plastics governance agree that mixed methods of both top-down and bottom-up driven solutions will be best for a global agreement.¹¹⁵ The question now lies in the hands of the International Negotiating Committee on global regulations that will affect all nations.

¹¹¹ <https://www.un.org/bbnj/>

¹¹² UN General Assembly. (2023). *Intergovernmental conference on an international legally binding instrument under the United Nations Convention on the Law of the Sea on the conservation and sustainable use of marine biological diversity of areas beyond national jurisdiction* (Advanced, unedited, pending paragraph numbering).

¹¹³ <https://www.cbd.int/>

¹¹⁴ CBD. (2022). COP15: NATIONS ADOPT FOUR GOALS, 23 TARGETS FOR 2030 IN LANDMARK UN BIODIVERSITY AGREEMENT <https://www.cbd.int/article/cop15-cbd-press-release-final-19dec2022>

¹¹⁵ Cowan, E., & Tiller, R. (2021). What shall we do with a sea of plastics? A systematic literature review on how to pave the road toward a global comprehensive plastic governance agreement. *Frontiers in Marine Science*, 8, 798534.

6.1_Concluding Remarks

The lifecycle of plastic materials is complexly intertwined through multiple levels of governance. This report has examined the complexity between plastic products and governance arrangements from the global level to the Norwegian national level. Within the research of this report, several relevant themes came to the attention of the authors. The need for knowledge and cooperation between governments, industry, and society is a must. Moreover, we cannot begin to understand the extent of the problem without having a wide-scale, global and transparent scheme to account for all plastic materials produced, sold, recycled and disposed of. To date, there is no information available to provide a direct overview of plastic quantities, qualities, and materials so as to see how plastics circulate within global and national markets. There are several individual tools and logging systems in place which can generate data on waste streams available for reuse, however, there are no standardized methods for how industries and governments communicate with each other to obtain this data. A transparent tool to visualize the sheer volume of plastic ready for (re)use is vital. A global treaty will need to cover all aspects of the value chain, starting with producers and manufacturers. Beginning points to reduce the growing number of materials are offering producers incentives to design better products, and making recycled materials cheaper by taxing virgin plastics. A framework for deciding which measures will be most important to include in a global treaty on plastics may also be a good starting point for discussions, as laid out by UNEP in their 'potential options for elements' within the future treaty (UNEP, 2023).¹¹⁶ It is important to note that there will not be a 'one-size-fits-all' solution when it comes to relevant measures of the future treaty. It will be vital to include both national and regional action plans that allow for flexibility depending on national needs and capacity. In an attempt to examine the best regulatory practices from around the world, a list of regulations and their strengths and weaknesses should be examined.

That is why the next task for the Plasticene project will be to create a long list of measures from which we will select 10-20 measures to research in-depth. To identify these measures, a framework for choosing suitable measures will be developed. The research on the measures on this short list will be used to write reports to inform stakeholders in need of better and more information on the options and effectiveness of various plastics policies.



¹¹⁶ <https://wedocs.unep.org/xmlui/bitstream/handle/20.500.11822/42190/UNEP-PP-INC.2-4%20English.pdf?sequence=13&isAllowed=y>

There will not be a 'one-size-fits-all' solution when it comes to relevant measures of the future treaty.

It will be vital to include both national and regional action plans that allow for flexibility depending on national needs and capacity.

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